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ABSTRACT

This final report discusses a project designed to study increased use of the 16 vocational-technical (VT) schools in Connecticut to serve more individuals of high school age; compare advantages and disadvantages of feasible alternatives; and recommend viable approaches for increasing facility use for serving more individuals. Chapter I outlines the project. Chapter II discusses 10 options which were studied, for example: Operate VT schools on a continuous school year basis. Each option section covers requirements for adoption and the advantages and disadvantages of the option. Chapter III presents five suggested alternatives for uses of the facilities. Each alternative section presents a description and provides the following information: Number of students utilizing VT schools, number of students graduating each year, composition of students' instructional program, instructional continuum, VT school facilities, equipment, staffing requirements, curriculum considerations, student scheduling, impact on local education agency, impact on students, bus transportation, public relations/information dissemination, and estimated resources requirements. Chapter IV provides estimated operating, capital, and start-up costs for each alternative. Cost estimates for building more vocational schools are also given. Chapter V suggests implementation tasks and gives target dates for the various steps for the five alternatives. Schedules, tables, evaluative criteria, and other related materials are included in the report. (LMS)

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ED139907

SELECTED ALTERNATIVES FOR SERVING MORE HIGH SCHOOL-AGED STUDENTS IN THE VOCATIONAL-TECHNICAL SCHOOLS

PREPARED FOR

CONNECTICUT DEPARTMENT OF EDUCATION

DECEMBER 1975

DE 010 516

PMM&Co. Peat, Marwick, Mitchell & Co.

PEAT, MARWICK, MITCHELL & CO.
CERTIFIED PUBLIC ACCOUNTANTS
100 CONSTITUTION PLAZA
HARTFORD, CONNECTICUT 06103

December 30, 1975

Dr. Mark R. Shedd
Commissioner of Education
Connecticut Department of Education
Hartford, Connecticut 06115

Dear Dr. Shedd:

Peat, Marwick, Mitchell & Co. (PMM&Co.) has completed its contract with the Department of Education to assist the Division of Vocational Education in developing means to increase the use of vocational-technical school facilities in order to serve more high school-aged youths. The objectives of the project, as stated in our contract, were to:

- Study increased use of vocational-technical schools to serve more individuals of high school age;
- Compare advantages and disadvantages of feasible alternatives;
- Recommend viable approaches for increasing facility use for serving more individuals.

The project was initiated by the Division in response to the increased demand by Connecticut youth for enrollment in the vocational-technical (VT) schools and the State Labor Department's projections of future manpower requirements which suggest the need for more trained youths over the next years to fill job openings in Connecticut industries. The State's vocational-technical schools are considered an important source of this training.

The accompanying report outlines the project (Chapter I) and discusses the various facility utilization options studied (Chapter II). Chapter III presents PMM&Co.'s suggested alternative uses of the facilities for piloting in the VT schools. Chapter IV provides estimated operating, capital and start-up costs. Cost estimates were also developed for building more vocational schools, so that the reader can better evaluate the alternatives. Chapter V suggests tasks and dates for implementing the alternatives in the schools.

RECOMMENDED ALTERNATIVES

The study results are five viable approaches for increasing the use of vocational-technical facilities to serve more students.

Alternative 1: Change the vocational-technical (VT) school program from 4 years to 3 years (grades 10, 11, and 12) by (1) enrolling all 9th grade students in the local education

agency (LEA) and (2) offering an exploratory program at the VT school, either during the summers following grades 8 and 9 for approximately 4 weeks, 4 hours per day, or during the student's 9th year for approximately 12 to 16 weeks, 2-1/2 to 3 hours per day.

Alternative 2: Change the VT school program from 4 years to 3 years (grades 10, 11, and 12) by (1) enrolling all 9th grade students in the LEA and (2) offering an exploratory program at the VT school during the summers following grades 8 and 9 for approximately 4 weeks, 4 hours per day.

Provide a two-year shared time exploratory/skill training program for 11th and 12th grade LEA students in late afternoon (2-1/2 to 3 hours). The LEAs would provide 3 hours of general and related programs to these students between 8 a.m. and 1 p.m.

Alternative 3: Change the VT school program from 4 years to 3 years (grades 10, 11, and 12) by (1) enrolling 9th grade students in the LEA and (2) offering an equivalent three-year shared time program in the late afternoon (2:30 p.m. to 5:30 p.m.) for the 10th, 11th, and 12th grade students at the LEA. The LEAs would provide three hours of general and related programs to these students between 8 a.m. and 1 p.m. An exploratory program would be offered to all students at the VT schools during the summers following grades 8 and 9 for approximately four weeks, four hours per day. While in exploratory, each student would indicate a preference for enrolling in the vocational-technical school or the shared time program.

Alternative 4: Change the VT school program from 4 years to 2 years, and provide intensive skill training equivelent to that which is being offered currently in grades 11 and 12. This would be accomplished by: (1) enrolling 9th and 10th grade students in the LEAs, (2) offering an exploratory program to all students at the VT school during the summers following grades 8 and 9 for approximately four weeks, four hours per day, and (3) instituting a 10th grade shared time program in the late afternoon for entry level skill training.

CONNECTICUT DEPARTMENT OF EDUCATION

COMPARATIVE ANALYSIS OF ALTERNATIVES

	Present Situation 16 VT Schools	Construct Additional VT Schools	Alternatives 1	2	3	4	5
Number of years at VT school							
Day Program	4	4	3	3	3	2	3
Late Afternoon				2	3	1	
Grades							
Day Program	9-12	9-12	10-12	10-12	10-12	11-12	10-12
Late Afternoon				11-12	10-12	10	
Number of Students Enrolled							
Day Program	12,000	24,000	12,000	12,000	12,000	12,000	18,000
Late Afternoon	-	-	-	6,000	6,000	6,000	-
Number of Graduates							
1,620 Hours Skill Training	3,000	6,000	4,000	4,000	6,000	6,000	6,000
1,080 Hours Skill Training				3,000			
Estimated Costs (in thousands of dollars)							
Operating Costs							
Current Costs (1974-75)	$ 19,267	$ 19,267	$ 19,267	$ 19,267	$ 19,267	$ 19,267	$ 19,267
Additional Costs (See Exhibit F, Page 88)	-	19,272	1,177	6,571	6,983	6,983	1,518
Total	19,267	38,539	20,444	25,838	26,250	26,250	20,785
Cost per Graduate	6.4	6.4	5.1	6.5	4.4	4.4	3.5
Start-up Costs (See Exhibit C, Pages 89-94)	-	57	24	57	46	59	77
Capital Costs							
Bond Issue							
Building	-	195,000					31,000
Equipment	-						
Annual Payment of Principal and Interest (20 Year Bond @ 5.75%)	-	16,500					2,600
Cost Impact on LEAs Increase (Decrease) (See Exhibit I, Page 106)	-	(7,380)	-	(1,830)	(1,830)	(1,830)	1,830

NOTE: Cost data are described in Chapter IV.
This exhibit is based on available information and assumptions set forth in this report which are subject to uncertainties, and therefore do not represent specific results which could be achieved.

Alternative 5: Change the VT school program to a 3 year skill center by (1) enrolling 9th grade students in the LEAs, (2) removing general and related courses from the VT schools, (3) converting VT school general and related classrooms, gyms, and other facilities to shops, and (4) offering an exploratory program at the VT school either during the summer following grades 8 and 9 for approximately four weeks, four hours per day, or during the student's 9th year for approximately 12 to 16 weeks, 2-1/2 to 3 hours per day.

NOTE: Alternatively, exploratory could be provided at the LEAs during the student's 9th grade as discussed on page 32, bottom.

The facing page compares key statistical and cost data for the "current situation", the "building of additional vocational-technical schools" and the five alternatives. The statistical and cost analysis for each alternative assumes adoption in all 16 VT schools to show the full implications and to provide a common basis for comparison. Implementation of one or more of the alternatives by the Department of Education, however, would most likely be in a selected VT school(s) on a pilot basis.

The current situation is based primarily on 1974-75 available data, except that estimated enrollment has been increased to 12,000 students to reflect the replacement of day adults and post-graduates by high school students as called for in the project's objectives. Additional building data have been provided only to assist the reader in evaluating the advantages and disadvantages of the alternative plans. (Building construction, as well as add-ons to existing VT schools and the acquisition of existing but abandoned facilities, are not responsive to the project's objective of making better use of existing facilities to serve more students.)

The analysis indicates that Alternative 1 is least expensive to implement but provides capacity for a graduating class of only 4,000 students with 1,620 hours of skill training, as does Alternative 2. Over a 6 year period Alternatives 1 and 2 would each graduate 14,000 students; current capacity would allow only 9,000 students to graduate in that time.

The building of additional schools and the remaining three alternatives have been calculated based on 6,000 graduates, although the computations could be scaled down to 4,000 students or even to one school for implementation on a pilot basis. Of these, Alternatives 3, 4, and 5 reflect similar costs when operating and capital costs are combined. Building more schools is the most expensive alternative. Over the same 6 year period Alternatives 4, 5, and 6 would each graduate 24,000 students; building additional facilities would double the number of graduates from 9,000 to 18,000.

The statistical and cost data represent only a portion of the considerations which must be examined by the Commissioner and Board of Education in order to select alternative uses of the vocational-technical schools to serve more students. The estimated cost impact on the LEAs as indicated in the comparative analysis, staffing, student educational and employment opportunities, and the like must also be considered before reaching a final decision.

The cost analysis of alternatives and cost impact on LEAs are not precise but represent our best judgment based on available data and the assumptions as set forth in this report. Their purpose is to provide guidelines with which to assess the alternatives. We have relied upon cost and enrollment information provided us by the State Department of Education and the VT schools without verifying such data. Although we believe the information and assumptions used constitute reasonable basis for preparation of the cost estimates, they are subject to uncertainties and variations and therefore are not represented as specific results which could be achieved. Should the Department of Education decide to implement one or more of the alternatives on a pilot basis, then a more explicit analysis of costs would be necessary.

IMPLEMENTATION

The pilot implementation of one or all of these alternatives in selected vocational-technical schools must be planned to minimize disruption and help insure success. As indicated in Chapter V, the alternatives should be phased over time: begin planning in this fiscal year, enroll 8th grade students in the summer exploratory at July 1977, and accomplish full conversion by September 1980.

* * * * *

PMM&Co. appreciated greatly the opportunity to assist the Connecticut Department of Education in this engagement. We believe that the alternatives are responsive to the Department's need to make better use of its limited resources while at the same time trying to give each child an opportunity to participate in a suitable program of education.

Very truly yours,

Peat Marwick Mitchell & Co.

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I. PROJECT OVERVIEW

A basic obligation of the State of Connecticut, as cited in its constitution and statutes, is to give each child an opportunity to participate in a suitable program of education; this includes vocational education. The State has 16 vocational-technical high schools (VT schools) which provide approximately 5% of the State's high school-aged students with a high degree of skill training in selected trade and industrial programs (e.g., automobile mechanics, carpentry, machine-tool).

The VT schools have earned a fine reputation for providing skill training and placing students in jobs specifically related to their educational experiences. Nearly 75% of the graduates in 1974 obtained jobs in their chosen trades.

Because of this progress and increased recognition that students must acquire marketable skills to find employment upon graduation, enrollment demands in the VT schools have increased significantly. In 1974-75, approximately 8,500 students applied to the day program. Of these only 4,500 (53%) were accepted and 3,850 students (or 45% of applicants) actually reported for study.

In response to increased demand, the Connecticut Department of Education approved the construction of its seventeenth VT school, which will be built in Groton and will serve 800 students. In light of the limited resources available to the State, additional construction was deemed too costly. The State prefers to meet increasing demands by using its existing facilities more efficiently. With this goal in mind, Peat, Marwick, Mitchell & Co. (PMM&Co.) was requested to accomplish the following tasks:

- To study the increased use of the 16 VT schools for the purpose of serving more individuals of high school age;
- To compare the advantages and disadvantages of feasible alternative approaches for increasing the use of VT schools;
- To recommend viable approaches for increasing facility use to serve more individuals.

The objectives of the study were to consider each alternative identified in the Department of Education's Request for Proposal and its impact on students, personnel costs, and the like.

Initially, the study was viewed as a project to assist the Division of Vocational Education in addressing a specific identified need. However, when Public Act No. 75-422 was passed by the State Legislature*, it became

*Public Act No. 75-422 requires the State Board of Education to prepare a five-year master plan for career and vocational education.

desirable to extend PMM&Co. project duration to December 31, 1975 and transfer project management responsibilities from the Division of Vocational Education to the Commissioner's Office to ensure coordination with the Department's more expansive development of a five-year master plan for career and vocational education. It was also decided that PMM&Co. should maintain direct communication with the Policy Group (a committee established to design the master plan for vocational and career education) in order that the results of the Policy Group would (1) enrich PMM&Co.'s analyses and (2) offer guidance in selecting the final alternative plans for in-depth analyses and costing.

Throughout the project, PMM&Co. worked with a Project Advisory Committee consisting of 11 persons representing various facets of education and interest groups (see Exhibit A - page 5). The assistance of its members was invaluable, especially in their willingness to openly and constructively address the items presented.

CONDUCT OF PROJECT

The initial step was to collect and synthesize enrollment, program, job, facility and cost data to both analyze the existing usage and to develop alternative plans for serving more high school age students in the VT schools. This was accomplished in part through selected interviews in the Department of Education and other departments and agencies and through site visits to the 16 VT schools. The site visits were also utilized to verify previously collected facility data and to hold group interviews (e.g., students, parents). See Exhibit B (page 6), for the site visit and group interview schedule.

An important consideration in this project was the establishment of evaluative criteria for selecting the most viable alternatives for pilot implementation by the Department of Education. After current facilities usage was assessed, available options were analyzed. PMM&Co., working with the Project Advisory Committee, identified possible criteria, finalized the list, and placed them in a priority sequence as noted in Exhibit C (page 8). The assigned point values were used to verify the importance of each and not as a basis for selecting the alternatives. Also, because of the the subjectivity inherent in this type of analysis, PMM&Co. viewed the criteria only as guidelines for selecting alternatives.

Each alternative was described in-depth, and estimates of operating, start-up and capital costs were prepared and contrasted with the cost of constructing additional facilities to meet the anticipated increased enrollment demand. This information was reviewed with the Project Advisory Committee, Policy Group, and the Commissioner of Education before being summarized in this report.

DESCRIPTION OF VT SCHOOLS

There are 16 VT schools located in various parts of the state under the direction of the Board of Education. Each school offers a full-time four-year program in grades 9-12. A student spends half time in general and related and half in skill training, usually on alternate weeks (week abouts) or for longer periods of time. From 7 to 12 weeks of the 9th grade

are devoted to the trade exploratory program which exposes the individual to a number of shops. In grades 10-12, if not before, the student selects a trade for skill training. The various trades offered by VT school are shown in Exhibit D (page 9).

In general, the student's four years at the VT schools are spent as follows:

	Program (hours of instruction)		
	General and	Trade	
Grade	Related	Exploratory	Skill Training
9	540	540	-
10	540	-	540
11	540	-	540
12	540	-	540
	2,160	540	1,620

Over 8,000 students applied to VT schools in 1974-75—an increase of 250% over those who applied in 1967-68. As indicated previously, less than half of those who applied actually enrolled in VT schools. The 1975-76 enrollment, based on the October 1 tally, lists 11,570 full-time students, 808 of which are adult and post-secondary students who spend full days in shop, rather than splitting their time between general and related and skill training programs. Approximately 2,000-3,000 students graduate annually with the required 1,620 hours of skill training. In addition, four VT schools conducted shared-time programs for area local educational agency (LEA) students. Approximately 250 students were enrolled in this program in 1974-75.

A summary comparison among the 16 VT schools of selected statistics is shown in Exhibit E (page 10). Most of this data was collected from VT school personnel during site visits. The buildings are generally well maintained through a combined effort of custodial and maintenance personnel and students. The condition of the facilities was judged to be adequate. A random observation of classrooms found most being utilized.

PMM&Co. had difficulty in determining exact student capacity by building Exhibit D, which shows capacity as reported by the Department of Education to be greater than VT school enrollment, could not be reconciled to available capacity data at the VT schools. VT school capacity which was prepared for this project was based on the Department's perceptions of available space as determined by actual classroom use (e.g. room assignments, storage areas) rather than initially planned use, and by the number of teaching personnel available to provide instruction. Further, since capacity standards and guidelines are nonexistent, it was not possible to establish a common basis for estimating capacities. Instead, for purposes of this project, we assumed 1975-76 enrollment as capacity.

If the capacities are later determined accurately, then the number of students utilizing the facilities should be adjusted accordingly. A suggested approach the Department of Education might use to determine capacity is to:

- Collect program data and blue-print drawings by VT school and national and regional data pertaining to facility standards;

- Determine standards regarding the number of square feet per student per course, trade and general and related. The standards should take into account ceiling heights, machinery requirements, storage of materials, room configurations, and space;

- Conduct room-by-room, school-by-school survey to determine actual enrollment, update blue-prints and identify variances which influence standards. If resources permit, study room scheduling and test adequacy by means of site observations;

- Compute maximum desirable student capacities and review with VT directors.

- Modify standards where necessary to reflect realistic levels of achievement.

EXHIBIT A

CONNECTICUT DEPARTMENT OF EDUCATION

PROJECT ADVISORY COMMITTEE

Dr. John Consoli, Director
Eli Whitney Regional Vocational-Technical School

Dr. Bernard Dolat, Consultant
Bureau of Research, Planning, and Evaluation
Connecticut Department of Education

Mr. John Farrell, Consultant
Bureau of Vocational-Technical Schools
Connecticut Department of Education

Dr. Maye Grant
Director of Professional Services
Capital Higher Education Service

The Honorable Mrs. Lucy Hammer

Mr. Bernard Hansen
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Dr. John LeConche
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Ms. Doris Roldan
Connecticut Association of Bilingual/Bicultural Education

Mr. Fred Wheeler
Director of Vocational Education
Watertown Public Schools

Mr. Richard Wilson, Director
Research and Planning Unit
Division of Vocational Education
Connecticut Department of Education

EXHIBIT B

CONNECTICUT STATE DEPARTMENT OF EDUCATION

Schedule of Site Visits to VT Schools

Date	School	Interest Group*
May 6	E. C. Goodwin Tech - New Britain	
15	A. I. Prince - Hartford	A
16	Howell Cheney - Manchester	B
20	Vinal - Middletown	A
21	Eli Whitney - Hamden	B
22	J. M. Wright - Stamford	A
23	H. H. Ellis - Danielson	B
28	H. C. Wilcox - Meriden	A
29	Emmett O'Brien - Ansonia	B
30	Windham - Willimantic	A
June 4	Platt - Milford	B
5	W. F. Kaynor - Waterbury	A
6	Norwich - Norwich	B
9	Oliver Walcott - Torrington	A
10	Henry Abbott - Danbury	B
11	Bullard-Havens - Bridgeport	A

*Interest Groups - Interviews

Schools with "A" Designation

Group of 4 to 6 Superintendents from feeder school districts
Group of 4 to 6 parents of students attending school
Group of 4 to 6 teachers

Schools with "B" Designation

Chairman and/or members of Citizens Consulting Committee
Group of 4 to 6 students attending school
Group of 4 to 6 teacher members

EXHIBIT B, CONT.

CONNECTICUT STATE DEPARTMENT OF EDUCATION

Division of Vocational Education

Proposed Schedule During Visit
by Peat, Marwick, Mitchell & Co.

9:00-10-15	Director and Assistant Director Interview regarding adequacy of facilities to serve program needs, pupil enrollment, and program offerings and demands, and to discuss alternative scheduling plans.
10:15-11:30	Business Officer and Building Superintendent Interview regarding building operations to identify necessary major structural repairs, suitability for air conditioning, anticipated impact of greater use on facility maintenance and repair, and need for additional personnel under alternative scheduling plans.
11:30- 3:00	Inspection of Facility with Building Superintendent Inspect the facility physically to determine its degree of use and condition.
3:00- 4:00	Interest Group*
4:00- 5:00	Interest Group*
5:00- 6:00	Interest Group*

EXHIBIT C

CONNECTICUT STATE DEPARTMENT OF EDUCATION

Evaluative Criteria
(in priority sequence)

MOST IMPORTANT (point value 10)*

Maximize the number of high school age students served by the vocational-technical school

Maximize use of existing vocational-technical facilities

Provide for comparable (or improved) learning opportunities

VERY IMPORTANT (point value 7)*

Provide flexibility for changing program offerings

Be responsive to school and/or program enrollment fluctuations

Keep added costs to a minimum

IMPORTANT (point value 5)*

Minimize disruption to the students' academic and trade learning experiences

Maintain (or improve) opportunities for student part-time employment during the school year

Maintain existing level of students' opportunities for school sport and extra-curricular activities

Minimize the level of change in relation to the student's family situation

LEAST IMPORTANT (point value 2)*

Minimize additional student travel

Respect impact of change on school personnel's existing modes of operation

Minimize facility construction/modification

*The point values were utilized only to provide guidance in selecting alternatives, and not for mathematical selection.

CONNECTICUT DEPARTMENT OF EDUCATION

Trade and Industrial Education Programs

COURSES OFFERED

VT SCHOOL		AIR COND. & REFRIG.	APPLIANCE REPAIR	AUTOMATIC SCREW MACHINE	AUTOMOBILE BODY REPAIR	AUTOMOBILE MECHANICS	AVIATION MECHANICS	AVIONICS	BAKING	BARBERING	BEAUTY CULTURE	CARPENTRY	CHEMISTRY, INDUSTRIAL	CONSTRUCTION SERVICES	DENTAL ASSISTANT	DENTAL LAB TECHNICIAN	DRAFTING, AERONAUTICAL	DRAFTING, ARCHITECTURAL	DRAFT., CONSTRUCTION DES.	DRAFTING MACHINE	ELECTRICAL	ELECTRICAL, INDUSTRIAL	ELECTRO-MECHANICAL	ELECTRONICS	FASHION DESIGN	FOOD TRADES	GAS & OIL FIRED BURNERS	GRAPHIC COMMUNICATIONS	HEALTH SERVICES OCCUP.	HEATING & PIPING	INTERNAL COMBUSTION ENG.	MACHINE-TOOL	MASONRY	PAINTING & DECORATING	PLUMBING & FITTING	PRACTICAL NURSE EDUC.	SHEET METAL	VOCATIONAL HOMEMAKING	WELDING
ANSONIA	6					X				PS	X	X								X	X			X								X				PS				
BRIDGEPORT	15					X			X	PS	X	X						X		X	X			X	X	X		X				X	X	X	X	PS				
DANBURY	12		X		X	X	PS				X	X								X	X			X				X				X			X	PS				
DANIELSON	9					X	PS				X	X						X		X	X			X								X	X							
HAMDEN	11				PS	X					X	X			PS	PS				X	X			X	X	X		X				X			X	PS				
HARTFORD	15				X	X				PS	X	X		X	PS				PS	X	X		X	X	X	X	X	X		X	X	X		X	PS	X		PS	
MANCHESTER	6					X						X								X	X			X								X								
MERIDEN	11	X				X					X	X								X	X			X				X				X			X		X		PS	
MIDDLETOWN	9				X	X					X	X								X	X			X					X			X				PS				
MILFORD	12	X			X			X			X							X		X		X	X	X					X	X		X					PS		PS	
NEW BRITAIN	13	X		X		X					X	X								X	X			X	X	X		X				X			X	PS				
NORWICH	11	X				X					X	X								X	X			X				X				X			X	PS	X			
STAMFORD	12					X					X	X	X		PS					X	X			X		X		X				X			X	PS			X	
TORRINGTON	9	X				X					X	X								X	X			X					X			X								
WATERBURY	10				X	X					X	X								X	X			X	X							X			X	PS				
WILLIMANTIC	9		X		X	X						X			PS			X		X	X			X								X				PS				

PS = Post Secondary

EXHIBIT D

EXHIBIT

CONNECTICUT DEPARTMENT OF EDUCATION

VOCATIONAL-TECHNICAL SCHOOLS SELECTED STATISTICS

Description	Ansonia	Bridgeport	Danbury	Danielson	Hamden	Hartford	Manchester	Meriden	Middletown	Milford	New Britain	Norwich	Stamford	Torrington	Waterbury	Willimantic
	SCHOOL															
Year opened	1968	1953	1953	1959	1956	1961	196?	1961	1962	1973	1962	1957	1961	1957	1953	1968
Year last addition completed	1970	1975	1975	1975	1971	1963	-	1972	1974	-	1973	1970	-	1969	1971	1970
Total acreage	15	34	14	67	20	15	35	33	27	27	20	24	19	14	15	15
Total square footage - Bldg.	79,778	149,096	112,008	100,291	138,642	158,911	68,343	133,663	94,542	142,933	151,336	99,626	115,405	71,430	115,426	90,141
Square footage per student	468	1,059	628	447	823	922	387	756	538	530	875	637	730	564	718	546
Number of:																
Shop rooms	9	17	12	11	19	19	7	13	10	14	16	13	17	9	13	11
Class rooms	9	27	16	10	23	20	8	20	16	21	20	16	14	15	17	13
Room for facility expansion	Yes One Proposal	Yes	Yes	Yes	Yes, Final Addition in Planning	Yes, Final Addition to Auto Body Shop	Yes	Yes	Yes	Yes Addition in Planning	Yes	Yes	Yes, Final Addition in Planning	Yes, Final Addition in Planning	Yes, Final Addition in Planning	Yes
Major repair work needed	None	None	None	Reroofing	Roof repairs	None	None	None	Roof repairs	None	None	None	Roof repairs	Replace boiler	Roof repairs	None
Special problems cited	None	None	Temperature Control	Meet Safety Codes	Athletic Field-Poor Drainage	Poor Vent. In Shops	Temp. Control in Building	Poor Vent. In Shops	None	No Cafeteria	None	None	Heat & Vent. in Shops	None	Poor vent. in Shops	Plumb. Leaks Athletic Field Poor Drainage
Enrollment:																
Number of applications received/% acceptance:																
1970	347 60%	729 57%	314 57%	293 92%	535 54%	865 55%	268 61%	418 47%	207 67%		615 51%	390 62%	495 67%	334 56%	578 32%	267 81%
1971	355 68%	777 53%	384 55%	254 87%	723 45%	816 52%	300 60%	458 46%	262 67%		738 48%	382 57%	504 69%	357 55%	666 30%	302 69%
1972	388 64%	812 48%	383 53%	378 82%	805 56%	782 54%	294 63%	594 54%	307 67%		803 52%	477 48%	446 72%	399 50%	797 31%	346 62%
1973	336 63%	737 60%	457 82%	351 78%	687 47%	736 55%	348 53%	545 57%	272 68%	543 76%	854 54%	543 48%	420 73%	360 58%	686 34%	403 71%
1974	386 62%	875 48%	457 61%	326 71%	664 51%	710 51%	360 46%	726 50%	385 74%	580 63%	787 54%	559 42%	420 62%	385 57%	629 42%	363 67%
Student enrollment	465	1,110	654	482	850	969	420	799	563	562	959	653	785	580	759	579
Building capacity	444	1,066	726	516	993	993	380	822	612	800	906	648	783	594	804	555
Percentage of 1974-75 applicants by selected town	Ansonia 32% Derby 15% Shelton 10% Naugatuck 13%	Bridgeport 91% Stratford 9% Monroe 4% Trumbull 3%	Danbury 48% New Milford 11% Brookfield 8% Newtown 7%	Killingly 23% Thompson 13% Plainfield 13% Putnam 8%	New Haven 51% Hamden 13% North Haven 5% N. Branford 4%	Hartford 75% Enfield 5% E. Hartford 3% Bloomfield 3%	E. Hartford 27% Manchester 19% Vernon 13% Enfield 12%	Meriden 52% Wallingford 20% Southington 12% Cheshire 8%	Middletown 32% Portland 11% Haddam 9% Cromwell 8%	Milford 45% W. Haven 30% Stratford 8% Orange 5%	New Britain 65% Bristol 17% Southington 8% Plymouth 5%	Norwich 30% Montville 8% Griswold 8% Stonington 7%	Stamford 59% Norwalk 22% Greenwich 7% Darien 4%	Torrington 43% Winchester 14% Thompston 6% Litchfield 5%	Waterbury 71% Prospect 10% Watertown 9% Wolcott 5%	Windham 28% Stafford 8% Manafield 7% Willington 8%
School Personnel:																
Faculty	26	68	40	27	49.1	64	23	48	36.5	37	57.5	44	45	37	48.5	31
Administration	4	13	7	4	10	12	5	11	6	6	10	8	9	6	9	6
Maintenance	7	16	8	6	12	15	5	10	5	7	12	7	8	6	8	6
Health Services	2	2	2	2	1	2	2	2	2	1	2	2	2	2	2	2
Cafeteria	4.19	3.7	2.84	3.14	3.14	5	2.47	4	2.84	0.7	1	2.85	-	2.58	2.84	2.28
Student/Teacher ratio:																
Total	17.9/1	16.3/1	16.4/1	17.9/1	17.3/1	15.1/1	18.2/1	17.4/1	15.4/1	15.2/1	16.7/1	14.8/1	17.4/1	15.7/1	15.6/1	18.7/1
Trade & Industrial	19.1/1	14.6/1	19.8/1	15.6/1	16.8/1	15.1/1	19.1/1	17.8/1	14.1/1	15.5/1	17.3/1	16.6/1	16.7/1	16.1/1	15.6/1	19.0/1
Budget (1974-1975)	$ 538,000	$ 1,470,000	$ 762,000	$ 695,000	$ 1,217,000	$ 1,165,000	$ 536,000	$ 1,086,000	$ 704,000	$ 629,000	$ 1,298,000	$ 904,000	$ 967,000	$ 680,000	$ 996,000	$ 664,000
Cost per student	$ 1,131	$ 1,322	$ 1,165	$ 1,442	$ 1,432	$ 1,202	$ 1,271	$ 1,359	$ 1,250	$ 1,119	$ 1,260	$ 1,384	$ 1,232	$ 1,172	$ 1,312	$ 1,146
Scheduling method	Block 7-7-6-6-6-6	Wk/About Mon-Fri	Block 6-9-6-9-6	Wk/About Mon-Fri	Block 6-9-6-9-6	Wk/About Mon-Fri	Wk/About Mon-Fri	Wk/About Wed-Tues	Block 6-9-6-9-6	Wk/About Mon-Fri	Wk/About Mon-Fri	Block 6-9-6-9-6	Wk/About Mon-Fri	Wk/About Wed-Tues	Wk/About Mon-Fri	Block 6-9-6-9-6
School hours	8-3:00	8-3:00	8:10-2:45	8-2:45	8-2:20	8:05-3:00	8:10-2:55	8:00-2:50	8:00-3:00	8:00-3:00	8:00-3:00	8:00-3:00	8:00-3:00	8:00-2:50	8:00-2:30	8:15-3:00
Number of Periods/Day	6	7	7	7	6	7	7	7	7	7	7	7	7	7	7	7
Average Period Length	60	50	50	50	60	50	50	50	50	50	50	50	50	50	50	50
Other usage of facility	-	3-5 p.m. LEA Shared Time	-	3-on Tech. College Programs	3-5 p.m. LEA Shared Time Program	-	4-6:30 p.m. Prisoner Training & Summer Programs	Technical College and Summer 7th Grade Exploratory Program	-	-	-	-	3:30-5:30 p.m. LEA Shared Time Programs	-	-	Community College Evening Classes

II. DEVELOPMENT OF OPTIONS

In order to ensure that various choices received appropriate consideration, a universe of options was explored. In selecting alternatives for potential implementation, PMM&Co. removed from consideration only those options which were designated by the master policy group as unsuitable (e.g. year-round and extended school day plans) and considered the following guidelines which were deemed consistent with PMM&Co.'s contractual requirements.

- Honor the moratorium on any new facility acquisition and/or construction including the purchase of satellite facilities. (This is consistent with project objectives to make better use of existing facilities.) PMM&Co. did, however, prepare enrollment and cost implications of building new facilities as a basis for comparing the alternatives developed.

- Continue to offer trade and industrial education programs in the VT schools. (The Department of Education, however, should modify program offerings in concert with changes in employment opportunities projected by the Connecticut Department of Labor. These changes may influence enrollment capacity and costs depending upon space and equipment needs of the programs.)

- Continue to provide students with at least the required 1,620 hours of skill training upon graduation from a VT school.

To respond to the question of how best to utilize the VT schools to serve more high school age children, PMM&Co. began by analyzing the list of options contained in the Department of Education's request for proposal. Options were added and deleted based upon their fulfillment of the criteria and assumptions and the policy group's recommendation that the implementation of year round and extended school day approaches are infeasible because they would require too drastic change to school operations, would interfere with family vacation patterns, and would present difficulty in coordinating busing with LEAs. Although these options were not assessed further, the year round approach is discussed as an option in the following pages. Satellite schools and greater uses of LEA facilities are also presented for discussion even though they do not directly meet the project objectives--better use of existing VT school facilities.

A description of each option follows. It includes the purpose and benefits and a review of major requirements and advantages. While there are only 10 options listed, the number of possibilities multiplies as one begins to combine the options. For example, Option A could easily be combined with all others. A three- or two-year program (Options C, D, E) could be operated year round (Option B) as a skill center (Option F), and/or as a satellite school (Option G).

These options provided the basis for PMM&Co.'s selection of viable alternatives which are discussed in the next chapter.

OPTION A

Provide only secondary school programs during the regular day session.

Option A proposes that the Department of Education provide increased vocational training opportunities for more high school youths by replacing approximately 800 adult day and post-graduate students currently enrolled at the VT schools with 1,500 secondary school students. (An adult day or post-graduate student occupies a shop station 180 days per year, while a secondary school student occupies a shop station 90 days per year; the other 90 days are devoted to general and related program training).

Adoption of the plan requires:

1. Expand existing and/or develop new trade offerings to utilize the shop areas vacated by post graduate programs.

2. Modify and equip shop areas vacated by post-graduate programs for use by secondary school students.

3. Utilize applicant pool of secondary school students attending LEA's to fill vacant slots created by change.

4. Develop an alternate method for providing vocational education to adult day and post graduate students.

   Possible approaches include:

   a. Transferring post graduate programs, such as LPN training, to higher education institutions (community or technical colleges).

   b. Utilizing proprietary facilities for post secondary age individuals requiring technical and industrial skill development.

   c. Conducting skill development training under the jurisdiction of the Department of Vocational-Technical Education in facilities provided by industry.

   d. Conducting skill development training under the jurisdiction of the Department of Vocational-Technical Education during periods other than the regular day school session.

Advantages

- Increases potential enrollment of secondary school students in the vocational technical school by approximately 1,500 (from 10,500 to 12,000 students).
- Allows the shop position previously occupied by one adult day student to be filled by two half-time secondary school-age students.
- Requires little or no change in the vocational-technical school program.
- Allows the trade instructor to devote more time to the secondary school student's curriculum, rather than develop individualized programs for the adult day students in attendance.
- Requires no additional capital investment.

Disadvantages

- Requires additional expense to provide vocational education opportunities to the adult and post-graduate students who are displaced.

OPTION B

Operate VT schools on a continuous school year basis.

Option B proposes converting the VT schools to a 45-15 year-round school schedule. Under this plan students would continue to attend school for 180 days, but their attendance would be distributed more evenly throughout the year. The student body would be divided into four approximately equal groups, with each group staggered into schedules of 45 class days (9 weeks) and 15 vacation days (3 weeks) of overlapping continuous cycles (a simplified model of the 45-15 plan is attached). Because of this overlapping, only 75% of the total student population would be in school at any one time, so that the facility could serve approximately one-third more students.

Adoption of the plan requires:

1. Extending teacher and other professional staff employment arrangements from 182 days per year to 242 days per year with an appropriate compensation increase of one-third. (An alternative is to hire more personnel.)

2. Dividing the student body into four equal groups (by geographic location or class year).

3. Dividing the year's curriculum into four nine-week cycles and offering each curriculum block four times per year. A simplified model of the 45-15 plan is attached.

4. Increasing costs for student program supplies, text books, materials, etc. by approximately one-third.

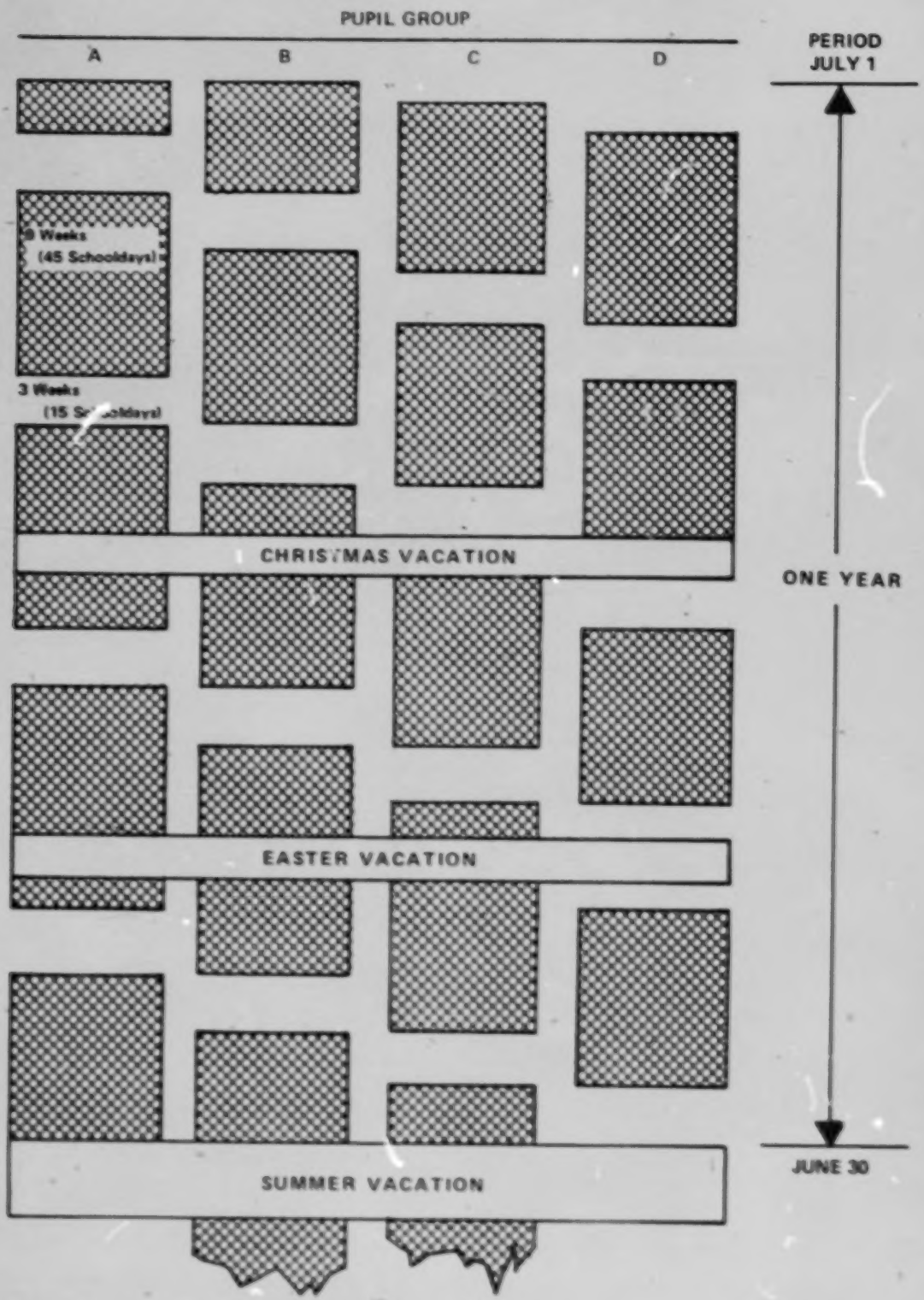
5. Increasing costs for building and equipment maintenance, light and power.

6. Air conditioning the vocational-technical school facilities.

7. Increasing transportation scheduling and expense.

8. Orienting school personnel, students and parents to the concept of year round schooling.

SIMPLIFIED MODEL OF A 45-15 YEAR ROUND PLAN



- SCHOOL YEAR = 180 DAYS IN 9 WEEK CYCLES
- VACATIONS = 12 WEEKS IN 3 WEEK SEGMENTS
- ALL GROUPS ON VACATION 1 WEEK CHRISTMAS & EASTER 2 WEEKS JULY
- SCHOOLS ARE CLOSED ON LEGAL HOLIDAYS

Advantages

- Increases potential enrollment of secondary school students in the vocational-technical schools by one-third (approximately 3,600 students).
- Increases facility and equipment utilization by one-third.
- May decrease operating expenses per student as a result of increased enrollment.
- Provides year-round employment and proportionate increase in compensation to school personnel desiring such.
- May reduce school vandalism which occurs in summer months.
- Equalizes student work force throughout the year instead of concentrating it during the summer months.
- Allows for flexibility in student scheduling.

Disadvantages

- Changes traditional concept of the school year significantly.
- Requires significant change in school's existing mode of operations.
- Interferes with summer recreational activities such as camp and parent traditional vacation plans.
- May increase absenteeism rate during summer months since students in LEAs will be off during this period.
- Complicates scheduling students' participation in after school sports activities.
- Prevents use of building by non-secondary school programs during the summer months.
- Complicates scheduling of facilities (classrooms) and personnel.
- Reduces teacher's opportunities for continuing educational training during summer.

OPTION C

Provide vocational education to secondary school students in the VT schools for grades 10, 11, and 12 only.

Option C provides increased vocational training opportunities for more high school aged students by reducing the length of time each student spends in the vocational-technical program from 4 to 3 years. This change would make vocational training available to more youths. While the total enrollment in the VT school system would remain the same, enrollment in each of the three grades would increase by approximately one-third.

Adoption of the plan requires:

1. Discontinuing the current exploratory trades program conducted during the 9th grade at the VT school.

2. Developing an alternative method to provide the exploratory training to vocationally oriented youth.

   Possible approaches include:

   a. Offering exploratory programs at the vocational-technical school during summer sessions.

   b. Offering exploratory programs at the vocational-technical school after regular school hours.

   c. Offering exploratory programs at the LEA facilities, under the direction of vocational-technical school personnel.

   d. Offering exploratory programs at the LEA, under the direction of LEA personnel.

   e. Offering exploratory programs at an exploratory program skill center.

   These approaches are presented in more detail in Options F, H, I and J.

3. Assigning all faculty members to 10th, 11th and 12th grade courses.

4. Providing all general curriculum education for vocationally oriented 9th grade students at the LEAs.

5. Adjusting the block schedules of shop and academic subjects from the traditional 9-11, 10-12 grade groups to two approximately equally sized groups of grades 10-11-12.

6. Implementing a public relations program to inform industry, parents, students and teachers of the change to a three-year vocational program.

Advantages

- Provides vocational-technical school training to more students than are currently being served by the system. While enrollment will not change, each remaining grade with increase by approximately one-third.
- Requires no additional capital investment.
- Does not change the number of hours of instruction received by a student in his permanent trade area (1,620 hours).
- May reduce trade supplies cost per student as a result of more sophomore, junior and senior students doing production work (which in many cases is paid for by a private third party).
- Involves little or no change in per student administrative, operating and maintenance costs.

Disadvantages

- Requires change in school's existing mode of operations.
- May require some increase in the number of academic instruction sections due to increased complexity in scheduling 10th, 11th, and 12th graders.
- Requires student to transfer at the end of his 8th and 9th school year. Besides being inconvenient, it could decrease the number of 9th grade students applying to the vocational-technical schools due to established peer relationships and familiarity with LEA.

OPTION D

Provide vocational education to secondary school students in the VT schools for grades 11 and 12 only.

Option D proposes that increased vocational training opportunities for more high school aged students be provided by reducing the length of time each student spends in the VT school program from 4 to 2 years. Ninth and tenth grade students would remain in the LEA, participating in the general instruction curriculum. Eleventh and 12th grade students desiring trade and industrial development would transfer to a VT school, completing 90 days (6 hours per day) of general academic and related instruction and 90 days (6 hours per day) of shop and trade theory instruction each year. While the total enrollment in the vocational-technical schools would remain at approximately 12,000 students, enrollment in each of the two grades would increase by 100%. Adoption of this plan would reduce the number of student hours of trade instruction from 1,620 to 1,080 hours.

Adoption of the plan requires:

1. Discontinuing the current exploratory trades program conducted during the 9th grade at the VT school.

2. Developing an alternate method to provide the exploratory trades experience to vocationally oriented youth.

   Possible approaches include:

   a. Offering exploratory programs at the vocational-technical school during summer sessions.

   b. Offering exploratory programs at the vocational-technical school after regular school hours.

   c. Offering exploratory programs at the LEA facilities, under the direction of vocational-technical school personnel.

   d. Offering exploratory programs at the LEA, under the direction of LEA personnel.

   e. Offering exploratory programs at an exploratory program skill center.

   These approaches are presented in more detail in Options F, H, I and J.

3. Discontinuing 9th and 10th grade general instruction at the vocational-technical school and modifying current 10th, 11th and 12th grade related subject and trade curriculums to conform to a two year program.

4. Reassigning personnel currently teaching 9th and 10th grade subjects to 11th and 12th grade courses. In-service training programs would be provided where necessary.

5. Providing all general instruction for vocationally oriented 9th and 10th grade students at the LEAs.

6. Adjusting block schedules of shop and academic subjects from traditional 9-11, 10-12 grade groups to two approximately equal sized groups of grades 11 and 12.

7. Implementing a public relations program to inform industry, parents, students and teachers of the change to the two-year vocational program.

Advantages

- Provides vocational-technical school training to approximately 100% more students than are currently being served by the system.
- Requires little or no change in per student administrative and operating and maintenance costs.
- Requires no additional capital investment.

Disadvantages

- Requires students to transfer at the end of his 8th and 10th school years. This could decrease the number of 10th graders applying to the vocational-technical schools due to established peer relationships and familiarity with LEA.
- Reduces the continuity of the student's educational experience and personal affiliations.
- Adversely affects varsity sports programs at the vocational-technical school.
- May increase school supplies costs per student due to decrease in supplies and materials provided by customers in production work.
- Reduces students' number of trade instruction hours from 1,620 to 1,080, thus reducing the students' credit towards existing licensing and apprenticeship requirements.

OPTION E

Provide vocational education to secondary school students in the VT schools for grades 11 and 12, only for advanced trade training.

Option E proposes an approach similar to Option D, except that trade exploratory and beginning skill development opportunities previously provided during the 9th and 10th grade at the VT schools are provided at the LEAs. The VT school becomes a center for 11th and 12th grade intensive skill development and related subject education. While the total enrollment in the vocational-technical schools would remain the same, enrollment in grades 11 and 12 would increase by 100%. Also because students would receive 9th and 10th grade skill training elsewhere, the number of hours provided for trade skill development would remain unchanged at 1,620 hours.

Adoption of the plan requires:

1. Discontinuing the exploratory trades program and 10th grade trade training curriculum currently provided at the VT schools.

2. Discontinuing the 9th and 10th grade general and related instruction at the VT schools.

3. Providing all general instruction for vocationally oriented 9th and 10th grade students at the LEAs.

4. Developing an alternate method to provide exploratory trade experience and beginning level skill development to vocationally oriented youth.

   Possible approaches include:

   a. providing exploratory programs and skills development training at the vocational technical school during summer sessions.

   b. providing exploratory programs and skill development training at the vocational technical school after regular school hours.

   c. providing exploratory programs and skill development training using the LEA facilities and possible mobile classroom facilities, under the direction of vocational technical school personnel.

   d. offering exploratory programs and skill development at a two-year vocational satellite.

   These approaches are presented in more detail in Options F, G, H, I and J.

5. Reassigning personnel teaching 9th and 10th grade subjects to 11th and 12th grade courses. In-service training programs would be provided where necessary.

6. Adjusting block schedules of shop and academic subjects from traditional 9-11, 10-12 grade groups to two approximately equal sized groups of grades 11 and 12.

7. Allowing 9th and 10th grade students taking exploratory and introductory skill development courses at the LEAs to receive credit toward a diploma.

8. Implementing a public relations program to inform industry, parents, students and teachers of the change in the vocational program.

Advantages

- Provides vocational-technical school training to approximately 100% more students than are currently being served by the system.
- Utilizes the specialized machinery and equipment to better advantage by making the vocational-technical school a center for intensive skill development.
- Requires a re-examination of each trade offering to determine the number of hours required to provide students with a desired level of skill development.
- Requires little or no change in per student administrative and operating and maintenance costs.
- Requires no additional capital investment.

Disadvantages

- Requires increased cooperation between the LEAs and the vocational-technical schools to ensure program continuity for students.
- Requires students to transfer at end of 8th and 10th school years. This could decrease the number of 10th graders applying to the vocational-technical schools due to established peer relationships and familiarity with LEA.
- May affect varsity sports programs at the vocational-technical school adversely.

OPTION F

Use VT schools as vocational skill centers.

Option F provides increased vocational training opportunities for more high school students by converting the VT schools into skill centers. Students would spend half time at the skill center receiving training in their chosen occupations, the remaining time at the LEA pursuing academic and related instruction. Enrollment increases would be dependent on the state's ability to transform classroom, library, gymnasium, and other space into shop facilities and the length of the trade training program.

Adoption of the plan requires:

1. Discontinuing general and related subject trade programs at the VT schools.

2. Discontinuing extra-curricular and sports activities at the vocational-technical schools.

3. Providing all general and related instruction, extra-curricular activities and sports programs at the LEAs.

4. Transferring responsibilities for selecting students for admission to the skill center and for issuing high school diplomas to the LEA.

5. Selecting scheduling method to be employed by the LEAs and skill center.

   Possible approaches and their limitations are:

   a. 1/2 day LEA - 1/2 day skill center

      Advantage: - requires little or no program scheduling modifications at the LEA to accommodate skill center students.

      Disadvantages: - reduces continuity of education

      - minimizes production work

      - drastically increases transportation expenses

b. block scheduling one or multiple weeks at LEA - one or multiple weeks at skill center.

Advantage: - provides increased continuity of education

- allows production work to be undertaken

- may reduce transportation costs and time

Disadvantages: requires major program and class scheduling changes at the LEA. May be prohibited in those LEAs which send a limited number of students to skill center.

6. Modifying trade curriculum if 1/2 day scheduling concept is adopted.

7. Converting space used for classroom and support activities into shop rooms.

8. Purchasing equipment and supplies for newly created shop areas.

9. Retraining and/or hiring trade teachers.

10. Implementing public relations program to inform industry, parents, students and teachers of the new methods of delivering vocational education in Connecticut.

Advantages

- Depending on length of program, provides vocational training to more high school age students. (Requires re-examination of each trade offering to determine the number of hours required to provide students with a desired level of skill development.)

- Provides opportunities for expansion of career and vocational education offerings.

Disadvantages

- Requires considerable expense to convert classroom space into shop space.

- Implementation of 1/2 day scheduling would increase students' preparation for shop training and reduce opportunities to participate in production work.

- Requires students to be transported between two facilities.

- Increases transportation costs.

- Requires increased coordination between LEA academic and related and skill center trade instruction.

- Requires additional capital investment.

OPTION G

Convert existing but vacated facilities into satellite schools.

Option G provides vocational training opportunities for more high school students by acquiring, modifying and equipping existing facilities as satellites of VT schools. The satellite is in effect a vocational skill center, housing the equipment, supplies and teaching personnel required to instruct a student in trade skill development. As in Alternative F, a student participating in the program is required to share his time between the LEA and satellite. Academic and related instruction would be provided at the LEA; trade instruction would be the responsibility of the satellite.

The satellite concept can be used to provide a multiple number of vocational training services.

Possible uses include:

A. Conduct 9th grade exploratory trade programs in selected trade areas for 2-1/2 to 3 hours per day for 1/2 a school year. This allows the student to obtain trade exploratory experience while establishing contact with the vocational-technical school system's philosophies and methods.

B. Provide 9th grade with exploratory trade instruction and 10th grade with beginning level skill development programs in specific trades.

C. Provide 4 years of skill development similar to that now available at the vocational-technical schools.

D. Provide 1 or 2 years (11th and 12th grade) skill development training. Assuming the 9th grade exploratory has been provided elsewhere, this concept would allow the student to gain 540 hours per year (180 days/years x 3 hours/day) training in a selected occupational skill.

The impact on enrollment is dependent upon the number of satellites established, the physical size of each facility, the number of trade offerings per facility, and the length of each program.

Adoption of the plan requires:

1. Determining (in conjunction with LEAs and industry) the geographic location of those communities with the greatest need for increased availability of vocational education.

2. Acquiring (at minimal cost) facilities within those areas capable of conversion to satellite facilities (available school buildings, office buildings).

3. Determining the specific use of the satellite (options A - D); selecting trade offerings, designing curriculum to provide the specific skill development.

4. Modifying the facility for use as a skill center.

5. Equipping the satellite with required equipment, supplies and personnel.

6. Establishing liaison between the vocational-technical school and the LEA to ensure provision of general instruction, course offerings and scheduling; credit earned for courses taken at the satellites; busing schedules and expenses.

Advantages

1. Provides vocational training to more students.

2. Offers flexibility in program design, level of skill development provided, accessibility to the program.

Disadvantages

1. Requires investment of funds to renovate and equip satellite facility.

2. Requires students to be transported between two facilities.

3. Increases transportation costs.

4. Requires additional capital investment.

5. Requires increased coordination between LEA academic and related and skill center trade instruction.

OPTION H

Use the VT schools after the regular day school session to conduct skill development training. (Expand shared-time program.)

Option H provides vocational training opportunities for more high school students by utilizing existing VT schools after the close of the regular school day. The student would still receive his education through a cooperative venture, acquiring general and related instruction at the LEA, trade skills instruction at the vocational-technical school. Students would attend each facility for approximately 2-1/2 to 3 hours—between 8:00 a.m. and 1:00 p.m. at the LEA; between 2:30 p.m. and 5:30 p.m. at the vocational school.

Possible uses include:

A. Conduct exploratory trade programs for freshman students. 9th grade students would attend for 2-1/2 to 3 hours per day for 1/2 the school year at the vocational-technical school (270 hours). Upon completion of the program, the student would then chose a trade for further skill development.

B. Conduct beginning level trade skill development for the 10th grade student who plans to participate in a more intensive skill development program in grades 11 and 12. 10th grade students attend afternoon sessions for 180 days, 2-1/2 to 3 hours per day. Sophomore students can receive 540 hours of trade skill development in their chosen occupations.

C. Provide 2 years of skill development training. 11th grade and 12th grade students receive 1,080 hours of trade skill development over two year period.

D. Provide one year of skill development training. Approximately 5,000 seniors receive intensive training for 180 days, 3 hours per day (540 hours) in either advanced training to enhance industrial arts programs provided at the LEA or to acquire basic skill training in an occupation.

E. Conduct intensive short-term courses to meet specific industrial training needs. Such programs could be presented from 3 to 10 p.m. daily and on weekends as needed.

Admission to such programs could be open to

- LEA students desiring short-term training in a marketable skill
- vocational-technical school students desiring multi-skill development or acceleration

- adult students desiring short-term training in a marketable skill, or
- adult students desiring advanced training in their chosen occupations.

Adoption of the Plan requires:

1. Determining the specific purpose of the afternoon school program (Option A - E).
2. Preparing trade curriculum.
3. Contracting with existing instructors and/or hiring trade instructors for the after school program.
4. Increasing budgeted monies allocated for supplies, maintenance, insurance, heat, light, power, administration and faculty salaries.
5. Establishing liaison between the vocational-technical schools and the LEAs to ensure provision of general instruction course offerings, credit earned, busing schedules and expenses.
6. Implementing public relations program to inform industry, parents, students and teachers of additional vocational education offerings in Connecticut.
7. Providing bus transportation for students in the program.

Advantages

- Increases the utilization of vocational-technical school facilities and equipment.
- Can provide to exposure to vocational education to approximately 6,000 additional students each year.
- Requires no additional capital investment.
- Can expand course offerings.

Disadvantages

- Can interfere with students' participation in after school employment and extra curricular activities.
- Requires LEAs to modify their schedules to accommodate afternoon students.
- Makes production work training programs unavailable to the afternoon student.
- Increases transportation costs.
- Requires students to be transported between two facilities.

OPTION I

Use the VT schools during the 8-week summer session to conduct skill development training.

Option I provides vocational training opportunities to more high school students by utilizing the vocational-technical schools during the summer months.

Possible uses include:

A. Conduct a two-year exploratory trade program for approximately 6,000 students each year. The student would attend 4 hours per day for 4 weeks at the end of the student's 8th and 9th grades (240 hours).

B. Conduct intensive short-term courses to meet specific industrial training needs. Such programs could be presented from 8 a.m. to 12 p.m.; 8 a.m. to 3 p.m.; and 3 p.m. to 10 p.m. daily.

Admission to such programs could be open to:

- LEA students desiring short-term training in a marketable skill
- vocational-technical school students desiring multi-skill development or acceleration
- adult students desiring short-term training in a marketable skill, or
- adult students desiring advanced training in their chosen occupations.

Adoption of the plan requires:

1. Determining the specific purpose of the summer school program (A or B).
2. Preparing trade curriculum.
3. Contracting with existing instructors and/or hiring trade instructors for 8-week program.
4. Rescheduling summer maintenance work.
5. Increasing budgeted monies allocated for supplies, maintenance, insurance, light, power and salaries.
6. Providing bus transporation for students in the program.

Advantages

- Increases the utilization of the vocational-technical school facilities and equipment.
- Can provide exposure to vocational education to approximately 6,000 additional students each year.
- Requires no additional capital investment.
- Can expand course offerings.

Disadvantages

- May require air conditioning of facilities (e.g., 12 a.m. - 6:00 p.m.)
- Increases transportation costs.

OPTION J

Conduct vocational skill development at the LEA facilities under the joint direction of LEA and VT school personnel.

Option J provides increased vocational training opportunities for more high school youths through cooperative utilization of existing facilities and equipment in the local education agency. The LEAs would in effect, serve as a satellite location to the vocational-technical school and would be staffed by vocational-technical school faculty. Administration and accreditation would be jointly determined by the two systems. Programs may be conducted during or after regular school day and/or in the evening.

Possible uses include:

A. Conduct 9th grade exploratory trade programs in selected trade areas. Technical and industrial occupations would be provided by the vocational-technical schools; Distributive Education, Business Ed., etc. by the LEA.

B. Conduct entry level trade and industrial skill development training. Upon completion of program, students would terminate training or indicate a desire for advanced skill development in grade 11 and 12 at the vocational-technical school.

C. Combination of alternative A and B.

Adoption of the plan requires:

1. Developing a cooperative arrangement between the LEAs and the vocational-technical system.

2. Determining:

   a. the vocational programs offered in LEAs

   b. vocational program resources available in LEAs

      - physical space (student capacity)

      - type of equipment and condition

3. Identifying program offerings and developing curriculum.

4. Contracting with existing instructors and/or hiring trade instructors for the program.

5. Implementing public relations program to inform industry, parents, students and teachers of additional vocational education offerings in Connecticut.

Advantages

- Increases availability of vocational education to more students.
- Increases utilization of LEA facilities.
- Provides excellent opportunity for student to obtain vocational training during high school years.
- Reduces transportation costs, scheduling requirements, student commutation time.
- Provides potential for multi-level skills development.
- Requires no additional capital investment.

Disadvantages

- Requires strong coordination between LEA and vocational-technical school system.
- May increase teaching salaries and hirings, depending on whether program is offered during or after regular school hours.
- May disrupt student's participation in after school employment and extra-curricular activities.

III. SELECTION OF ALTERNATIVES

Underlying the need for this project has been the belief that VT school skill training is a means of providing students with marketable skills for employment upon graudation. As indicated previously, nearly 75% of the 1974 graduates found jobs in the trades they learned in school. In contrast with this success is the increased percentage of applicants being turned away from the VT schools because of limited space. Therefore, the interest of the Department of Education in studying alternative ways to serve more high school age students is both valid and desirable. The solution which results from the study should be capable of serving large numbers of students, not just a few hundred or thousand, in order to justify the changes required and to keep up with demand increases for the years to come.

SELECTION PROCESS

Selection was accomplished by systematically eliminating options which did not comply with the project's objectives and combining the beneficial attributes of those which remained to form five alternatives which PMM&Co. recommends to the Commissioner and Board of Education for piloting in the VT schools. For purpose of comparison, we have presented an assessment of maintaining the status-quo—building more schools to accomodate more students.

As indicated previously, year-round school was removed from further consideration at the suggestion of the policy group because it would disrupt existing modes of operations and family vacation plans, and present difficulty in coordinating busing and student matriculation with LEAs. Acquisition of existing but vacated buildings (e.g., department store, supermarket) and LEA schools also runs contrary to the criteria. On the other hand, it does satisfy the objectives in that it represents an alternative to buildings more VT schools by eliminating or minimizing costs for site development, architectural fees, and construction. The state would spend money only on renovation and equipment.

Expanding the use of LEA facilities for exploratory and skill training programs also was eliminated because it did not make better use of existing VT facilities. Further, in the scope of this project, PMM&Co. was not able to obtain data in order to accurately evaluate the LEA's capability (e.g., qualified staff, equipment, space) to offer these programs to students.

Making better use of LEAs was extensively discussed at the Project Advisory Committee Meeting. One resulting recommendation which PMM&Co. endorses is for the Department of Education to consider replacing a summer exploratory program (which is an integral part of our recommendations) at the VT schools with an exploratory during the student's 9th grade at the LEA.

CONNECTICUT DEPARTMENT OF EDUCATION

COMPARATIVE ANALYSIS OF ALTERNATIVES

	Present Situation 16 VT Schools	Construct Additional VT Schools	Alternatives 1	2	3	4	5
Number of years at VT school							
Day Program	4	4	3	3	3	2	3
Late Afternoon				2	3	1	
Grades							
Day Program	9-12	9-12	10-12	10-12	10-12	11-12	10-12
Late Afternoon				11-12	10-12	10	
Number of Students Enrolled							
Day Program	12,000	24,000	12,000	12,000	12,000	12,000	18,000
Late Afternoon	-	-	-	6,000	6,000	6,000	-
Number of Graduates							
1,620 Hours Skill Training	3,000	6,000	4,000	4,000	6,000	6,000	6,000
1,080 Hours Skill Training				3,000			
Estimated Costs (in thousands of dollars)							
Operating Costs							
Current Costs (1974-75)	$ 19,267	$ 19,267	$ 19,267	$ 19,267	$ 19,267	$ 19,267	$ 19,267
Additional Costs (See Exhibit F, Page 88)	-	19,272	1,177	6,571	6,983	6,983	1,518
Total	19,267	38,539	20,444	25,838	26,250	26,250	20,785
Cost per Graduate	6.4	6.4	5.1	6.5	4.4	4.4	3.5
Start-up Costs (See Exhibit G, Pages 89-94)	-	57	24	57	46	59	77
Capital Costs							
Bond Issue							
Building	-	195,000					31,000
Equipment	-						
Annual Payment of Principal and Interest (20 Year Bond @ 5.75%)	-	16,500					2,600
Cost Impact on LEAs Increase (Decrease) (See Exhibit I, Page 106)	-	(7,360)	-	(1,830)	(1,830)	(1,830)	1,830

NOTE: Cost data are described in Chapter IV.
This exhibit is based on available information and assumptions set forth in this report which are subject to uncertainties, and therefore do not represent specific results which could be achieved.

The industrial arts personnel could be responsible for the program; the VT school instructors would design the curriculum and provide implementation assistance. Where necessary, some summer or afternoon in-service training could be provided to sharpen the industrial arts teachers' skills. If this approach is deemed feasible (possibly in metropolitan areas, e.g., Bridgeport, Hartford) then the 8th and 9th grade students could bypass summer school and take exploratory as an integral part of the 9th grade LEA program.

PM&Co. believes serious long-range consideration should be given to utilizing the LEAs as centers for exploratory and entry level skill training in grades 9 and 10 and utilizing the VT schools for the more intensive 11th and 12th grade skill training. This program would build cooperation between institutions and provide an opportunity for more students to gain vocational education.

Those options which remained were further analyzed and combined until PM&Co. was able to define five alternatives considered most viable. No solution is perfect in that each presents some inconvenience to one or more interest groups (e.g., students going to school possibly in the summer and/or late afternoon, teachers requiring some retraining as the 9th grade is phased out). On the other hand, each provides more students with an opportunity to obtain VT school skill training and jobs upon graduation; teachers can receive additional compensation by teaching during the added terms should they so desire.

THE ALTERNATIVES

The five alternatives for implementation in the VT schools are described in the remaining pages of this chapter.

The facing page summarizes significant statistics and estimated costs by alternative. The first two columns contain data for the existing VT system and consequences of continuing the status quo - building more VT schools. Each column reflects the adoption of the alternative in all 16 VT schools to show the full implications and to provide a common basis for comparison. Actual implementation by the Department of Education would most likely take place in selected VT school(s) on a pilot basis.

Present enrollment capacity has been estimated at 12,000 students, assuming the adoption of Option A - replace the approximate 800 adult day and post-graduate students currently enrolled full-time only in shop classes in the VT schools with 1,500 regular high school students who split their time between shop and general and related. This change is consistent with the objectives of the project. Possible alternative approaches for training the displaced individuals is outlined in the option.

ALTERNATIVE 1

Change the VT school program from 4 years to 3 years (grades 10, 11, and 12) by (1) enrolling all 9th grade students in the LEA and (2) offering an exploratory program at the VT school, either during the summers following grades 8 and 9 for approximately 4 weeks, 4 hours per day, or during the students' 9th year for approximately 12 to 16 weeks, 2-1/2 to 3 hours per day. (Alternatively, exploratory could be provided at the LEAs during the student's 9th grade as discussed on page 32, bottom.)

This alternative would not affect total enrollment at the VT school, but it would increase the graduating class from approximately 3,000 to 4,000 students. The number of skill training hours would remain at 1,620. A more extensive discussion of this alternative's impact on enrollment VT school, student attitude and so on is outlined below. Cost implications and implementation requirements are discussed in Chapters IV and V respectively.

	Hours
1. NUMBER OF STUDENTS UTILIZING VT SCHOOLS	
A. Day Program	
. Unchanged at	12,000
B. Late Afternoon Shared Time Program	
. None	-
C. Summer Exploratory Program	
. Two 4-week periods with a minimum of 4,000 students in each - July and August	8,000
Number of students utilizing VT Schools	20,000
2. NUMBER OF STUDENTS GRADUATING EACH YEAR	
A. Day Program	
. Increased from 3,000 to 4,000 graduates with the required 1,620 hours of skill training	
B. Late Afternoon Shared Time Program	
. None	
3. COMPOSITION OF STUDENTS' INSTRUCTIONAL PROGRAM	
A. Day Program	
. Exploratory program moved from 9th grade to summers at end of grades 8 and 9. Training reduced from approximately 540 to 160 hours.	
. Grade 9 - general and related program - moved from VT school to LEA	
. Grade 10-12 provided at VT school	
- general and related instruction unchanged at	1,620
- Skill training unchanged at	1,620

B. Late Afternoon Shared Time Program

. None

4. INSTRUCTIONAL CONTINUUM

A. Student Transfers

. Students will be required to transfer to VT school at the end of the youth's 9th grade.

B. VT program orientation

. Student will first be exposed to VT school program at end of 8th grade.

5. VT SCHOOL FACILITIES

A. Utilization

. Utilization increases - 8 week summer exploratory program.

B. Availability for Other Uses

. No change from existing patterns during regular school year.

. Available after 1 p.m. daily during summer.

C. Facility Modifications

. No change required.

D. Air Conditioning

. Scheduling summer program between 8 a.m. and 1 p.m. should not necessitate air conditioned shop facilities. Additional fans might be necessary in some shops.

E. Building Maintenance

. Additional custodial services will be required during summer.

. Major maintenance work schedule can be modified to accomodate student use of facility during summer.

. Utilities (other than heat), supplies and repairs will increase due to additional use of facilities by students - 40 day summer program.

6. EQUIPMENT

A. Maintenance/Replacement

. Increased use of equipment by more 10th, 11th and 12th grade students will result in increased repair and replacement costs.

B. Textbooks

. Transfer 9th grade general and related course textbooks to the LEAs

. Increase the number of general and related and shop textbooks to accomodate enrollment increases in grades 10-12.

C. New Acquisition

. Acquire additional shop equipment to accomodate enrollment increases in grades 10-12.

7. STAFFING REQUIREMENTS

A. Administration

. Summer program coordinator required.

. Part-time clerk/typist required for summer program.

B. Faculty

. Reassign 9th grade teachers to grades 10-12. Implement in-service training programs to the extent orientation and re-training are required.

. Enlist one part-time teacher for each 15-20 students during summer program.

C. Professional Support Staff

. Additional guidance services to help orient and place students in VT school exploratory and three-year program.

. Part-time nursing services for summer program.

D. Plant Operations

. Additional custodial services for summer program.

E. Cafeteria

. No changes required.

8. CURRICULUM

A. Pupil/Teacher Ratio

. No change required.

B. Program Offerings

. Exploratory program - will be provided by the VT School during the summer.

. Grade 9 - will be provided by the LEA (curriculum guidelines should be made available from both institutions to help strengthen program coordination).

. Grades 10-12

- Skill training and general and related instruction will be provided at the VT school. (Conversion to a three-year program should not inherently cause changes to current trade offerings. However, since the number of students graduating annually will increase from 3,000 to 4,000, it is desirable that current trade offerings be examined closely in light of changing industry/labor requirements.)

C. Curriculum Development

. Modify exploratory program, 9th grade for use in 160 hour summer program.

. No other major curriculum changes required at VT schools.

D. Apprenticeship and Licensing Requirements

. No change anticipated.

E. Job Placement

. Increased efforts required by shop instructors, guidance counselors and others to place students in jobs due to increase in graduating class to 4,000 students.

9. STUDENT SCHEDULING

A. Day Program

. Modify student rotation system to accomodate the three-year VT school program. (This change requires determining the number of class sections for each course and grade, and scheduling classroom space and teacher workloads.)

B. Late Afternoon Shared Time Program

. None

C. Summer Exploratory Program

. Initiate summer shop rotation schedule.

10. IMPACT ON LEA

A. Facilities

. The LEAs will be required to provide general instruction to approximately 3,000 additional 9th grade students. Enrollment in grades 10, 11, and 12, however, would be decreased (after 3 years of program operation) by the same amount.

B. Administration

. No change anticipated

C. Instructional Programs

. No change anticipated.

D. Staffing

. No change anticipated.
(Possible increase in 9th grade faculty levels may be required in those high schools traditionally sending a substantial number of students to the vocational technical schools (e.g. Bridgeport, Hartford).)

11. IMPACT ON STUDENT

A. Attitude

. Student required to participate in 4-week summer exploratory programs at end of 8th grade and 9th grades and transfer twice during the first two years of high school. The student may be reluctant to participate in VT school program for these reasons as well as the required acclamation to LEA.

B. Extra-Curricular Activities

. No change anticipated

C. Sports Program

. Freshmen squads eliminated at VT schools

D. Part-time Work Experience

. No change anticipated (although a potentially greater number of VT school juniors and seniors will be pursuing similar job opportunities).

E. Family Vacation Plans

. Summer exploratory program may interfere with some vacation schedules.

12. BUS TRANSPORTATION

A. Day Program

. No change anticipated.

B. Late afternoon Shared-Time Program

. None

C. Summer Exploratory Program

. Initiate program to transport summer students between LEA and VT school. Bus scheduling and contracting required.

13. PUBLIC RELATIONS/INFORMATION DISSEMINATION

A. Internal Relations

. Inform VT school and State Department of Education personnel of planned changes, timing and benefits. Communicate the changes via newsletters, media and meetings.

B. External Relations

. Inform industry, labor, parents and other community members of program changes, impacts on enrollment, numbers of graduates and timing.

14. ESTIMATED RESOURCE REQUIREMENTS

A. Start-up Costs

. Modification of exploratory program

. In-service training for VT 9th grade teachers

. Public relations/information dissemination

. Bus scheduling/contracting

B. Capital Costs

. Additional shop equipment.

C. Operating Costs

A. Day Program

. Salaries

- Guidance counselors

B. Late Afternoon Shared Time Program

. None

C. Summer Exploratory Program

. Salaries

- Program coordinators

- Teachers

- Clerks, nurses and custodians

. Instructional supplies

. Equipment maintenance and replacement

. Utilities

. Bus transportation

ALTERNATIVE 2

Change the VT school program from 4 years to 3 years (grades 10, 11, and 12) by (1) enrolling all 9th grade students in the LEA and (2) offering an exploratory program at the VT school during the summers following grades 8 and 9 for approximately 4 weeks, 4 hours per day. (Alternatively, exploratory could be provided at the LEAs during the student's 9th grade as discussed on page 32, bottom.)

Provide a two-year shared time exploratory/skill training program for 11th and 12th grade LEA students in late afternoon (2-1/2 to 3 hours). The shared time program would not be viewed as an "add-on" to the LEA student's class load, but an integral part of the student's instructional program. The student would spend between 2-1/2 to 3 hours at the LEA (between 8:00 a.m. and 1:00 p.m.) taking general and related courses and the remainder of the time at the vocational-technical school.

This alternative would increase the VT school's total enrollment by approximately 6,000 late afternoon students. The graduating class of the three-year program would increase from approximately 3,000 to 4,000 students. Each student would have received 1,620 hours of skill training. The graduating class for the two-year program would increase from a few hundred students to approximately 3,000 students with 1,080 hours of exploratory and entry level skill training. A more extensive discussion of this alternative's impact on enrollment, VT school, student attitude and so on is outlined below. Cost implications and implementation requirements are discussed in Chapters IV and V respectively.

	Hours
1. NUMBER OF STUDENTS UTILIZING VT SCHOOLS	
A. Day Program	
. Unchanged at	12,000
B. Late Afternoon Shared Time Program (2-5 p.m.)	
. Two-year program with 3,000 students in grades 11 and 12.	6,000
	18,000
C. Summer Exploratory Program	
. Two 4-week periods with 4,000 students in each - July and August	8,000
Number of students utilizing VT schools	26,000

2. NUMBER OF STUDENTS GRADUATING EACH YEAR

A. Day Program

. Increases from 3,000 to 4,000 graduates with the required 1,620 hours of skill training.

B. Late Afternoon Shared-Time Program

. Increase from a few hundred to 3,000 graduates with approximately 1,080 hours of exploratory and skill training.

3. COMPOSITION OF STUDENTS' INSTRUCTIONAL PROGRAM

A. Day Program

. Exploratory program moved from 9th grade to summers at end of grades 8 and 9. Training reduced from approximately 540 to 160 hours.

. Grade 9 - general and related program - moved from VT school to LEA

. Grade 10-12 provided at VT school

- general and related instruction unchanged at 1,620 hours

- Skill training unchanged at 1,620 hours

B. Late Afternoon Shared Time Program

. Grades 9 and 10 - provided at LEA

. Grades 11 and 12

- General and related instruction provided at LEA from 8 a.m. to 1 p.m.

- Exploratory/skill training provided at VT school from 2:30-5:30 p.m. - 1,080 hours

4. INSTRUCTIONAL CONTINUUM

A. Student Transfers
(1) Day Program

. Student will be required to transfer to VT school at the end of the youth's 9th grade.

(2) Late Afternoon Shared Time Program

. Student will be required to commute between LEA and VT school during grades 11 and 12.

B. VT Program Orientation
(1) Day Program

. Student will first be exposed to VT school program at end of 8th grade.

(2) Late Afternoon Shared Time Program

. Student will first be exposed to VT school program at beginning of 11th grade.

5. VT SCHOOL FACILITIES

A. Utilization

. Utilization increases.

- Late afternoon program during regular school year from 2:30-5:30 p.m. each school day.

- 9-week summer exploratory program.

B. Availability for Other Uses

. Available after 5:30 p.m. during regular school day and 1 p.m. daily during summer.

C. Facility Modifications

. No change required.

D. Air Conditioning

. Scheduling summer program between 8 a.m. and 1 p.m. should not necessitate air conditioned shop facilities. Additional fans might be necessary in some shops.

E. Building Maintenance

. Additional custodial services will be required for late afternoon and during summer.

. Major maintenance work schedule can be modified to accomodate student use of facility during summer.

. Utilities (other than heat), supplies and repairs will increase due to additional use of facilities by students.

- 180 days for 3 hours per day

- 40 day summer program

4. EQUIPMENT

A. Maintenance/Replacement

. Increased use of equipment by more 10th, 11th, and 12th grade students will result in increased repair and replacement costs.

B. Textbooks

. Transfer 9th grade general and related course textbooks to the LEAs.

. Increase the number of general and related and shop textbooks to accomodate enrollment increases in grades 10-12.

. Increase the number of trade theory materials to accomodate afternoon students.

C. New Acquisition

. Acquire additional shop equipment to accommodate enrollment increases.

- Day program - grades 10-12

- Late afternoon - exploratory and grade 10 equivalent

7. STAFFING REQUIREMENTS

A. Administration

. Late afternoon and summer program coordinators required.

. Part-time clerk/typists required.

B. Faculty

. Reassign 9th grade teachers to grades 10-12. Implement in-service training programs to the extent orientation and re-training are required.

. Part-time teachers for each 15-20 students during late afternoon and summer programs.

C. Professional Support Staff

. Additional guidance services to help orient and place student in VT school exploratory and three-year program.

. Part-time nursing services for late afternoon and summer program.

D. Plant Operations

. Additional custodial services for late afternoon and summer program.

E. Cafeteria

. No changes required.

8. CURRICULUM

A. Pupil/teacher ratio

. No change required

B. Program Offerings
(1) Day Program

. Exploratory program - will be provided by the VT school during the summer.

. Grade 9 - will be provided by the LEA (curriculum guidelines should be made available from both institutions to help strengthen program coordination).

. Grade 10-12

- Skill training and general and related instruction will be provided at the VT school. (Conversion to a three-year program should not inherently cause changes to current trade offerings. However, since the number of students graduating annually will increase from 3,000 to 4,000, it is desirable that current trade offerings be examined closely in light of changing industry labor requirements.)

(2) Late Afternoon Shared Time Program

. Grades 9 and 10 - provided by LEA

. Grades 11 and 12 -

- General and related instruction provided at LEA from 8 a.m. to 1 p.m.

- Exploratory/Skill training provided at VT school from 2:30-5:30 p.m.
(Equipment in some shop areas may be unavailable for use by afternoon students because machines are set up with day school production work.)

C. Curriculum Development

. Modify exploratory program, 9th grade for use in 160 hour summer program.

. Review and modify trade curriculum to maximize LEA students learning experience in two-year program.

D. Apprenticeship and Licensing Requirements

. No change anticipated for day school student.

. Programs should be examined by apprenticeship and licensing boards to determine the number of hours to be credited towards apprenticeship and licensing requirements for completion of the two-year program.

E. Job Placement

. Increased efforts required by shop instructors, guidance counselors and others to place students in jobs due to increase in graduating class to

- 4,000 graduates - day program

- 3,000 graduates - late afternoon shared time program.

9. STUDENT SCHEDULING

A. Day Program

. Modify student rotation system to accomodate the three-year VT school program.

B. Late Afternoon Shared Time Program

. Student selection for shared time program should be accomplished in the 10th grade by the LEA in concert with the VT school.

. LEA must coordinate students' 11th and 12th grade shared time program with VT school.

(The changes in A and B require determining the number of class sections for each course and grade, and scheduling classroom space and teacher workloads.)

C. Summer Exploratory Program

. Initiate summer shop rotation schedule.

10. IMPACT ON LEA

A. Facilities

. The LEAs will be required to provide general instruction to approximately 3,000 additional 9th grade students. Enrollment in grades 10, 11 and 12, however, would be decreased (after 3 years of program operation) by the same amount. In addition LEA grade 11 and 12 students in the late afternoon shared time program would be enrolled only 3, rather than 6, hours at the LEA.

B. Administration

. No change anticipated.

C. Instructional Programs

. LEAs required to modify graduation requirements to accept credits earned by the student at the VT school while participating in the shared time program.

. Possible curriculum modifications required to provide student with related course requirements.

(Potential decrease to the industrial art's program offerings, teaching staff, and supply and equipment requirements due to student's participation in VT shared time program.)

D. Staffing

. No change anticipated.

(Possible increase in 9th grade faculty levels may be required in those high schools traditionally sending a substantial number of students to the vocational technical schools (e.g., Bridgeport, Hartford).)

11. IMPACT ON STUDENT

A. Attitude
(1) Day Program

. Student required to participate in 4-week summer exploratory programs at end of 8th and 9th grades and transfer twice during the first two years of high school. The student may be reluctant to participate in VT school program for these

reasons as well as the required acclamation to LEA.

(2) Late Afternoon Shared Time Program

. Student's attitude toward school, discipline and work may be formulated before entering the shared-time program; and may present a problem to adapt to the vocational-technical education behavioral requirements.

. Student need not break ties with established friends to obtain vocational training.

B. Extra-Curricular Activities
(1) Day Program

. No change anticipated.

(2) Late afternoon shared time program

. Restricts student's participation.

C. Sports Programs
(1) Day Program

. Freshman squads eliminated at VT schools.

(2) Late Afternoon Shared Time Program

. Restricts student's participation

D. Part-time Work Experience
(1) Day Program

. No change anticipated (although a potentially greater number of VT school juniors and seniors will be pursuing similar job opportunities.)

(2) Late Afternoon shared time program.

. Restricts after school employment. However, the possibility for part-time work during the morning is available.

E. Family Vacation Plans

. Summer exploratory program may interfere with some vacation schedules.

12. BUS TRANSPORTATION

A. Day Program

- No change anticipated.

B. Late Afternoon Shared Time Program

- Student must be transported between schools.
- Student may be traveling from school to home at dark.

C. Summer Exploratory Program

- Initiate program to transport summer students between LEA and VT school. Bus scheduling and contracting required.

13. PUBLIC RELATIONS/INFORMATION DISSEMINATION

A. Internal Relations

- Inform VT school, LEA and State Department of Education personnel of planned changes, timing and benefits. Communicate the changes via newsletters, media and meetings.

B. External Relations

- Inform industry, labor, parents and other community members of program changes, impacts on enrollment, numbers of graduates and timing.

14. ESTIMATED RESOURCE REQUIREMENTS

A. Start-up Costs

- Modification of exploratory program
- Establish shared time program
- In-service training for VT 9th grade teachers
- Public relations/information dissemination
- Bus scheduling/contracting
- Student scheduling at LEA

B. Capital Costs

. Additional shop equipment for grades 10-12

C. Operating Costs

A. Day Program

. Salaries

- Guidance counselors

B. Late Afternoon Shared Time Program

. Salaries

- Program Coordinators

- Teachers

- Clerks, nurses and custodians

. Instructional supplies

. Equipment maintenance and replacement

. Utilities

. Bus transportation

. Insurance

C. Summer Exploratory Program

. Salaries

- Program coordinators

- Teachers

- Clerks, nurses and custodians

. Instructional supplies

. Equipment maintenance and replacement

. Utilities

. Bus transportation

ALTERNATIVE 3

Change the VT school program from 4 years to 3 years (grades 10, 11, and 12) by (1) enrolling 9th grade students in the LEA and (2) offering an equivalent three-year shared time program in the late afternoon (2:30 p.m. to 5:30 p.m.) for the 10th, 11th, and 12th grade students at the LEA. The shared time program would not be viewed as an "add-on" to the LEA student's class load, but an integral part of the student's instructional program. The student would spend between 2-1/2 to 3 hours at the LEA (between 8:00 a.m. and 1:00 p.m.) taking general and related courses and the remainder of the time at the vocational-technical school.

An exploratory program would be offered to all students at the VT schools during the summers following grades 8 and 9 for approximately four weeks, four hours per day. (Alternatively, exploratory could be provided at the LEAs during the student's 9th grade as discussed on page 32, bottom.)

This alternative would increase the VT school's total enrollment by approximately 6,000 late afternoon students. The graduating class of the three-year program would increase from approximately 3,000 to 6,000 students (4,000 regular day, 2,000 late afternoon). Each student would receive 1,620 hours of skill training. A more extensive discussion of this alternative's impact on enrollment, VT school, student attitude and so on is outlined below. Cost implications and implementation requirements are discussed in Chapters IV and V respectively.

1. NUMBER OF STUDENTS UTILIZING VT SCHOOLS — Hours

A. Day Program

- Unchanged at — 12,000

B. Late Afternoon Shared Time Program (2-5 p.m.)

- Three-year program with 2,000 students in each of grades 10-12 — 6,000

18,000

C. Summer Exploratory Program

- Two-4-week periods with 6,000 students in each - July and August — 12,000

Number of students utilizing VT school — 30,000

2. NUMBER OF STUDENTS GRADUATING EACH YEAR

A. Day Program

- Increase from 3,000 to 4,000 graduates with the required 1,620 hours still training

B. Late Afternoon Shared Time Program

- Increase from a few hundred to 2,000 graduates with the required 1,620 hours of skill training.

3. COMPOSITION OF STUDENTS' INSTRUCTIONAL PROGRAM

A. Day Program

- Exploratory program moved from 9th grade to summers at end of grades 8 and 9. Training reduced from approximately 540 to 160 hours.

- Grade 9 - general and related program - moved from VT school to LEA

- Grade 10-12 provided at VT school

  - general and related instruction provided at LEA from 8 a.m. to 1 p.m. — 1,620 hours

  - Skill training provided at VT school from 2:30-5:30 p.m. — 1,620 hours

B. Late Afternoon Shared Time Program

- Exploratory program during summers at end of grades 8 and 9 with approximately 160 hours.
- Grade 9 - provided at LEA
- Grades 10-12
  - general and related instructions provided at LEA from 8 a.m. to 1 p.m. 1,620 hours
  - skill training provided at VT school from 2:30-5:30 p.m. 1,620 hours

4. INSTRUCTIONAL CONTINUUM

A. Student transfers
(1) Day Program

- Student will be required to transfer to VT school at the end of the youth's 9th grade.

(2) Late Afternoon Shared Time Program

- Student will be required to commute between LEA and VT school during grades 10, 11 and 12.

B. VT program Orientation

- Student will first be exposed to VT school program at end of 8th grade.

5. VT SCHOOL FACILITIES

A. Utilization

- Utilization increases
  - Late afternoon program during regular school year from 2:30-5:30 p.m.
  - 8-week summer exploratory program

B. Availability for Other Uses

- Available after 5:30 p.m. during regular school year and 1 p.m. daily during summer.

C. Facility Modification

- No change required.

D. Air Conditioning

- Scheduling summer program between 8 a.m. and 1 p.m. should not necessitate air conditioned shop facilities. Additional fans might be necessary in some shops.

E. Building Maintenance

- Additional custodial services will be required for late afternoon and during summer.

- Major maintenance work schedule can be modified to accomodate student use of faculty during summer.

- Utilities (other than heat), supplies and repairs will increase due to additional use of facilities by students.

  - 180 days for 3 hours per day

  - 40-day summer program

6. EQUIPMENT

A. Maintenance/Replacement

- Increased use of equipment by more 10th, 11th, and 12th grade students will result in increased repair and replacement costs.

B. Textbooks

- Transfer 9th grade general and related course textbooks to the LEAs.

- Increase the number of general and related and shop textbooks to accomodate enrollment increases in grades 10-12.

- Increase in number of trade theory materials to accomodate afternoon students.

C. New Acquisitions

. Acquire additional shop equipment to accomodate enrollment increases.

- Day program - grades 10-12

- Late afternoon - grades 10-12

7. STAFFING REQUIREMENTS

A. Administration

. Late afternoon and summer program coordinators required

. Part-time clerk/typist required.

B. Faculty

. Reassign 9th grade teachers to grades 10-12. Implement in-service training programs to the extent orientation and re-training are required.

. Part-time teachers for each 15-20 students during late afternoon and summer programs.

C. Professional Support Staff

. Additional guidance services to help orient and place student in VT school exploratory and three-year program.

. Part-time nursing services for late afternoon and summer programs.

D. Plant Operations

. Additional custodial services and late afternoon and summer program.

E. Cafeteria

. No changes required.

8. CURRICULUM

A. Pupil/Teacher Ratio

. No change required

B. Program Offerings
(1) Day Program

. Exploratory program - will be provided by the VT school during the summer.

. Grade 9 - will be provided by the LEA (curriculum guidelines should be made available from both institutions to help strengthen program coordination).

. Grade 10-12

- Skill training and general and related instruction will be provided at the VT school.

(Conversion to a three-year program should not inherently cause changes to current trade offerings. However, since the number of students graduating annually will increase from 3,000 to 4,000, it is desirable that current trade offerings be examined closely in light of changing industry labor requirements.)

(2) Late Afternoon Shared Time Program

. Exploratory program - will be provided by the VT school during the summer.

. Grade 9 - provided by LEA

. Grade 10-12

- General and related instruction provided at LEA from 8 a.m. to 1 p.m.

- Exploratory/skill training provided at VT school from 2:30-5:30 p.m.

(Equipment in some shop areas may be unavailable for use by afternoon students because machines are set up with day school production work.)

C. Curriculum Development

. Modify exploratory program, 9th grade for use in 160 hour summer program.

. Review and modify trade curriculum to maximize LEA students learning experience in three-year program.

D. Apprenticeship and Licensing Requirements

. No change anticipated for day school student.

. Late afternoon shared time student with the required 1,620 hours of skill training should meet licensing requirements.

. Programs should be examined by apprenticeship and licensing board to determine the number of hours to be credited towards apprenticeship and licensing requirements for completion of the three-year program.

E. Job Placement

. Increased efforts required by shop instructors, guidance counselors and others to place students in jobs due to increase in graduating class to

- 4,000 graduates - day program

- 2,000 graduates - late afternoon shared time program

9. STUDENT SCHEDULING

A. Day Program

. Modify student rotation system to accomodate the three-year VT school program.

B. Late Afternoon Shared Time Program

. Student selection for shared time program should be accomplished in the 9th grade by the LEA in concert with the VT school.

. LEA must coordinate student's 10th, 11th and 12th grade shared time program with VT school.

. (The changes in A and B require determining the number of class sections for each course and grade, and scheduling classroom space and teacher workload.)

C. Summer Exploratory Program

. Initiate summer shop rotation schedule.

10. IMPACT ON LEA

A. Facilities

. The LEAs will be required to provide general instruction to approximately 3,000 additional 9th grade students. Enrollment in grades 10, 11 and 12, however, would be decreased (after 3 years of program operation) by the same amount. In addition LEA grades 10, 11 and 12 students in the late afternoon shared time program would be enrolled only 3, rather than 6, hours at the LEA.

B. Administration

. No change anticipated.

C. Instructional Programs

. LEAs required to modify graduation requirements to accept credits earned by the student at the VT school while participating in the shared time program.

. Possible curriculum modifications required to provide student with related course requirements.

(Potential decrease to the industrial art's program offerings, teaching staff, and supply and equipment requirements due to student's participation in VT shared time program.)

D. Staffing

. No change anticipated.

(Possible increase in 9th grade faculty levels may be required in those high schools traditionally sending a substantial number of students to the vocational technical schools e.g., Bridgeport, Hartford.)

II. IMPACT ON STUDENT

A. Attitude
(1) Day Program

. Student [illegible] to particpate in 4-week summer exploratory programs at end of 8th and 9th grades and transfer twice during the first two years of high school. The student may be reluctant to participate in VT school program for these reasons as well as the required acclamation to LEA.

(2) Late Afternoon Shared Time Program

. Student's attitude toward school, discipline and work may be formulated before entering the shared time program; and may present a problem to adapt to the vocational-technical education behavioral requirements.

. Student need not break ties with established friends to obtain vocational training.

B. Extra-Curricular Activities
(1) Day Program

. No change anticipated.

(2) Late afternoon shared time program

. Restricts students participation.

C. Sports Programs
(1) Day Program

. Freshmen squads eliminated at VT schools

(2) Late Afternoon Shared Time Program

. Restricts students participation

D. Part-time Work Experience
(1) Day Program

. No change anticipated (although a potentially greater number of VT school juniors and seniors will be pursuing similar job opportunities).

(2) Late Afternoon Shared Time Program

. Restricts after school employment. However, the possibility for part-time work during the morning is available

E. Family Vacation Plans

. Summer exploratory program may interfere with some vacation schedules.

12. BUS TRANSPORTATION

A. Day Program

. No change anticipated.

B. Late Afternoon Shared Time Program

. Student must be transported between schools.

. Student may be traveling from school to home at dark.

C. Summer Exploratory Program

. Initiate program to transport summer students between LEA and VT school. Bus scheduling and contracting required.

13. PUBLIC RELATION/INFORMATION DISSEMINATION

A. Internal Relations

. Inform VT school, LEA and State Department of Education personnel of planned changes, timing and benefits. Communicate the changes via newsletters, media and meetings.

B. External Relations

. Inform Industry, Labor, parents and the community members of program changes, impacts on enrollment, number of graduates and timing.

14. ESTIMATED RESOURCE REQUIREMENTS

A. Start-up Costs

- Modification of exploratory program
- Establish shared time program
- In-service training for VT 9th grade teachers
- Public relations/information dissemination
- Bus scheduling/contracting
- Student scheduling at LEA

B. Capital Costs

- Additional shop equipment for grades 10-12.

C. Operating Costs
(1) Day Program

- Salaries
  - Guidance counselors

(2) Late Afternoon Shared Time Program

- Salaries
  - Program coordinators
  - Teachers
  - Clerks, nurses and custodians
- Instructional supplies
- Equipment maintenance and replacement
- Utilities
- Bus transportation

(3) Summer Exploratory Program

. Salaries

- Program coordinators

- Teachers

- Clerks, nurses and custodians

. Instructional supplies

. Equipment maintenance and replacement

. Utilities

. Bus transportation

ALTERNATIVE 4

Change the VT school program from 4 years to 2 years, and provide intensive skill training equivalent to that which is being offered currently in grades 11 and 12. This would be accomplished by: (1) enrolling 9th and 10th grade students in the LEAs; (2) offering an exploratory program to all students at the VT school during the summers following grades 8 and 9 for approximately four weeks, four hours per day (alternatively, exploratory could be provided at the LEAs during the student's 9th grade as discussed on page 32, bottom); and (3) instituting a 10th grade shared time program in the late afternoon for entry level skill training. The shared time program would not be viewed as an "add-on" to the LEA student's class load, but an integral part of the student's instructional program. The student would spend between 2-1/2 to 3 hours at the LEA (between 8:00 a.m. and 1:00 p.m.) taking general and related courses and the remainder of the time at the vocational-technical school.

This alternative would increase the VT school's total enrollment by approximately 6,000 late afternoon 10th grade students. The graduating class would increase from approximately 3,000 to 6,000 students. Each student would receive 1,620 hours of skill training. A more intensive discussion of this alternative's impact on enrollment, VT school, student attitude and so on is outlined below. Cost implications and implementation requirements are discussed in Chapters IV and V respectively.

	Hours
1. NUMBER OF STUDENTS UTILIZING VT SCHOOLS	
A. Day Program	
. Unchanged at	12,000
B. Late Afternoon Shared Time Program	
. 10th grade program	6,000
C. Summer Exploratory Program	
. Two 4-week periods with 6,000 students in each-July and August	12,000
Number of students utilizing VT schools	30,000
2. NUMBER OF STUDENTS GRADUATING EACH YEAR	
Day/Late Afternoon Program	
. Increases from 3,000 to 6,000 graduates with the required 1,620 hours of skill training	

3. COMPOSITION OF STUDENTS' INSTRUCTIONAL PROGRAM

A. Day/Late Afternoon Program

. Exploratory program moved from 9th grade to summers at end of grades 8 and 9. Training reduced from approximately 540 to 160 hours.

. Grade 9 - general and related program - moved from VT school to LEA.

. Grade 10

- general and related instruction provided at LEA from 8 a.m. to 1 p.m.

- skill training provided at VT school from 2:30-5:30 p.m.

. Grades 11-12 - provided at VT school.

4. INSTRUCTIONAL CONTINUUM

A. Student Transfers

(1) Day Program

. Student will be required to transfer to VT school at the end of the youth's 10th grade.

(2) Late Afternoon Shared Time Program

. Student will be required to commute between LEA and VT school during 10th grade.

B. VT Program Orientation

. Student will first be exposed to VT school program at end of 8th grade.

5. VT SCHOOL FACILITIES

A. Utilization

. Utilization Increase

- Late afternoon program during regular school year from 2:30-5:30 p.m.

- 8 week summer exploratory program.

B. Availability for Other Uses

. Available after 5:30 p.m. during regular school year and 1 p.m. daily during summer.

C. Facility Modifications

. No change required

D. Air Conditioning

. Scheduling summer program between 8 a.m. and 1 p.m. should not necessitate air conditioned shop facilities. Additional fans might be necessary in some shops.

E. Building Maintenance

- Additional custodial services will be required for late afternoon and during summer.

- Major maintenance work schedule can be modified to accomodate student use of facility during summer.

- Utilities (other than heat), supplies and repairs will increase due to additional use of facilities by students

  - 180 days for 3 hours per day

  - 40 day summer program

6. EQUIPMENT

A. Maintenance/Replacement

- Increased use of equipment by more 10th, 11th and 12th grade studemts will result in increased repair and replacement costs.

B. Textbooks

- Transfer 9th and 10th grade general and related course textbooks to the LEAs.

- Increase the number of general and related shop textbooks to accomodate enrollment increases in grades 10 to 12.

C. New Acquisition

- Acquire additional shop equipment to accomodate enrollment increases im grades 10-12.

7. STAFFING REQUIREMENTS

A. Administration

- Late afternoon and summer program coordinators required

- Part-time clerk/typist required.

B. Faculty

. Reassign 9th and 10th teachers to grades 11 and 12. Implement in-service training programs to the extent orientation and re-training are required.

. Part-time teachers for each 15-20 students during late afternoon and summer programs.

C. Professional Support Staff

. Additional guidance services to help orient and place student in VT school exploratory and skill training program.

. Part-time nursing services for late afternoon and summer programs.

D. Plant Operations

. Additional custodial services for late afternoon and summer program.

E. Cafeteria

. No changes required.

8. CURRICULUM

A. Pupil/Teacher Ratio

. No change required.

B. Program Offerings

(1) Day Program

. Exploratory program - will be provided by the VT school during the summer

. Grade 9 - will be provided by the LEA (curriculum guidelines should be made available from both institutions to help strengthen program coordination).

. Grade 10 -

- general and related instruction provided by LEA from 8 a.m. to 1 p.m.

- skill training provided at VT school from 2:30-5:30 p.m. (Equipment in some shop areas may be unavailable for use by afternoon students because machines are set up with day school production work.)

. Grades 11-12 - provided at VT school
(Conversion to a two-year program should not inherently cause changes to current trade offerings since 10th grade skill training will be offered at the VT school on a shared time basis. However, since the number of students graduating annually will increase from 3,000 to 6,000, it is desirable that current trade offerings be examined closely in light of changing industry labor requirements.)

C. Curriculum Development

. Modify exploratory program, 9th grade for use in 160 hour summer program.

. Review and modify trade curriculum to maximize LEA students learning experience in 10th grade program.

D. Apprenticeship and Licensing Requirements

. No change anticipated.

E. Job Placement

. Increased efforts required by shop instructors, guidance counselors and others to place students in jobs due to increase in graduating class to 6,000 students.

9. STUDENT SCHEDULING

A. Day/Afternoon Program

. Modify student rotation system to accomodate the two-year VT school program.

. Student selection for program should be accomplished in the 8th grade by the VT school in concert with the LEAs.

- LEA must coordinate student's 10th grade shared time program with VT school.

- (These changes require determining the number of class sections for each course and grade, and scheduling classroom space and teacher workloads.)

B. Summer Exploratory Program

- Initiate summer shop rotation schedule.

10. IMPACT ON LEA

A. Facilities

- The LEAs will be required to provide general instruction to approximately 6,000 additional students (3,000 each in grades 9 and 10). Enrollment in grades 11 and 12, however, would be decreased (after 3 years of program operation) by the same amount. However, LEA grade 10 students in the late afternoon shared time program would be enrolled only 3, rather than 6, hours at LEA.

B. Administration

- No change anticipated.

C. Instructional Programs

- VT school required to modify graduation requirements to accept credits earned by the student at the LEA in grades 9 and 10.

- Possible curriculum modifications required at the LEA to provide 10th grade shared time student with related course requirements.
(Potential decrease to the industrial art's program offerings, teaching staff, and supply and equipment requirements due to students participation in VT shared time program.)

D. Staffing

- No change anticipated.
(Possible increase in 9th grade faculty levels may be required in those high schools traditionally sending a substantial number of students to the vocational technical schools, e.g., Bridgeport, Hartford.)

11. IMPACT ON STUDENT

A. Attitude

. 11th grade student may be somewhat reluctant to transfer to VT school after spending first two years in LEA, although during grades 9 and 10 the student was exposed to exploratory and entry level skill training in shared time program.

B. Extra-Curricular Activities

. Restricts 10th grade shared time student from participating at LEA.

. Activities at VT school may require modification to accomodate a two-year program.

C. Sports Program

. Freshmen squads eliminated at VT schools.

. Varsity sports would require modification to accomodate a two-year program.

. Restricts 10th grade shared time student from participation.

D. Part-Time Work Experience

. No change anticipated for 11th and 12th grade VT students (although a potentially greater number of students will be pursuing similar job opportunities).

. Restricts after school employment for 10th graders (where applicable).

E. Family Vacation Plans

. Summer exploratory program may interfere with some vacation schedules.

12. BUS TRANSPORTATION

A. Day Program

. No change anticipated

B. Late Afternoon Shared-Time Program

- Student must be transported between schools.
- Student may be traveling from school to home at dark.

C. Summer Exploratory Program

- Initiate program to transport summer students between LEA and VT school. Bus scheduling and contracting required.

13. PUBLIC RELATIONS/INFORMATION DISSEMINATION

A. Internal Relations

- Inform VT school, LEA and State Department of Education personnel of planned changes, timing and benefits. Communicate the changes, via newsletters, media and meetings.

B. External Relations

- Inform industry, labor, parents and other community members of program changes, impacts on enrollment, number of graduates and timing.

14. ESTIMATED RESOURCE REQUIREMENTS

A. Start-up Costs

- Modification of exploratory program
- Establish shared time program
- In-service training for VT 9th and 10th grade teachers
- Public relations/information dissemination
- Bus scheduling/contracting
- Student scheduling at LEA

B. Capital Costs

- Additional shop equipment for grades 10-12.

C. Operating Costs

(1) Day/Late Afternoon Program

. Salaries

- Program coordinators

- Teachers

- Clerks, nurses and custodians

- Guidance counselors

. Instructional Supplies

. Equipment Maintenance and Replacement

. Utilities

. Bus Transportation

(2) Summer Exploratory Program

. Salaries

- Program coordinators

- Teachers

- Clerks, nurses and custodians

. Instructional Supplies

. Equipment Maintenance and Replacement

. Utilities

. Bus Transportation

ALTERNATIVE 5

Change the VT school program to a 3 year skill center by (1) enrolling 9th grade students in the LEAs, (2) removing general and related courses from the VT schools, (3) converting VT school general and related classrooms, gyms, and other facilities to shops, and (4) offering an exploratory program at the VT school either during the summer following grades 8 and 9 for approximately four weeks, four hours per day, or during the student's 9th year for approximately 12 to 16 weeks, two and a half to three hours per day. (Alternatively, exploratory could be provided at the LEAs during the student's 9th grade as discussed on page 32, bottom.)

This alternative would increase the VT school's total enrollment by approximately 6,000 students. The graduating class of the three-year program would increase from approximately 3,000 to 6,000 students. Each student would receive 1,620 hours of skill training. A more extensive discussion of this alternative's impact on enrollment, VT school, student attitude and so on is outlined below. Cost implications and implementation requirements are discussed in Chapters IV and V respectively.

	Hours
1. NUMBER OF STUDENTS UTILIZING VT SCHOOLS	
A. Day Program	
. Increases from 12,000 to 18,000 students. (Conceptually 12,000 student stations should double when moving to a 1/2 day program. But shop areas require more square footage per student. Therefore, PMM&Co. assumed only a 50% increase in stations.	18,000
B. Late Afternoon Shared Time Program	
. None	-
C. Summer Exploratory Program	
. Two 4 week periods with 6,000 students in each - July and August	12,000
Number of students utilizing VT schools	30,000
2. NUMBER OF STUDENTS GRADUATING EACH YEAR	
A. Day Program	
. Increases from 3,000 to 6,000 graduates with the required 1,620 hours of skill training.	
B. Late Afternoon Shared Time Program	
. None	
3. COMPOSITION OF STUDENTS' INSTRUCTIONAL PROGRAM	
A. Day Program	
. Exploratory program moved from 9th grade to summers at end of grades 8 and 9. Training reduced from approximately 540 to 160 hours.	
. Grade 9 - general and related program - moved from VT school to LEA	
. Grade 10-12	
- general and related instruction provided 1/2 days at LEA	1,620 hours
- Skill training provided 1/2 days at VT school	1,620 hours

B. Late Afternoon Shared Time Program

. None

4. INSTRUCTIONAL CONTINUUM

A. Student Transfers

. Student will be required to travel between LEA and VT school to obtain education in grades 10-12.

B. VT Program Orientation

. Student will first be exposed to VT school program at end of 8th grade

5. VT SCHOOL FACILITIES

A. Utilization

. Utilization increases - 8 week summer exploratory program

B. Availability for Other Uses

. No change from existing patterns during regular school year

. Available after 1 p.m. daily during summer

C. Facility Modification

. Extensive modifications required to convert current classroom and support areas into shop areas

- electrical wiring
- ventilation
- plumbing
- access doors
- reinforce flooring, reflooring
- petitioning
- fire proofing

D. AIR CONDITIONING

. Scheduling summer program between 8 a.m. and 1 p.m. should not necessitate air conditioned shop facilities. Additional fans might be necessary in some shops.

E. Building Maintenance

- Additional custodial services will be required during summer.
- Major maintenance work schedule can be modified to accommodate student use of facility during summer.
- Utilities (other than heat), supplies and repairs will increase due to additional use of facilities by students - all day summer program.

6. EQUIPMENT

A. Maintenance/Replacement

- Increased use of equipment by more 10th, 11th, and 12th grade students will result in increased repair and replacement costs.
- General and related classroom equipment and furniture transferred to LEAs.

B. Textbooks

- Transfer general and related course textbooks to the LEAs
- Increase the number of shop textbooks to accommodate enrollment increases in grades 10-12.

C. New Acquisition

- Acquire additional shop equipment to accommodate both the conversion of classroom to shop areas and the enrollment increases in grades 10-12.

7. STAFFING REQUIREMENTS

A. Administration

- Summer program coordinator required
- Program coordinator in each VT school to coordinate VT-LEA curriculums
- Part-time clerk/typists required

B. Faculty

- Additional shop instructors to handle expanded skill training program.
- Part-time instructors for each 15-20 students during summer exploratory program.
- Reassign, transfer to LEAs and/or release general and related teachers grades 9-12. To the extent necessary, implement in-service training to orient and re-train teachers.

C. Professional Support Staff

- Additional guidance services to help orient and place student in VT school exploratory and skill training program.
- Reduce or eliminate librarian (library services).
- Part-time nursing services for summer program.

D. Plant Operations

- Additional custodial services for summer program

E. Cafeteria

- No changes required, however, VT school cafeteria could be closed and converted to shops if LEAs had capacity to feed all students.

8. CURRICULUM

A. Pupil/Teacher Ratio

- No change required

B. Program Offerings

- Exploratory program - will be provided by the VT school during the summer.
- Grade 9 - provided at LEA
- Grades 10-12
  - General and related instruction provided 1/2 days at LEAs.
  - Extra curricular and physical education/sport programs provided at LEAs.
  - Skill training provided 1/2 days at VT schools (1/2 day instruction would reduce student opportunities to do production work away from school (e.g., house building).
- Conversion to a three-year 1/2 day program should not inherently cause changes to current trade offerings. However, since the number of students graduating annually will increase from 3,000 to 6,000, it is desirable that current trade offerings be examined closely in light of changing industry labor requirements.)

C. Curriculum Development

. Modify exploratory program, 9th grade for use in 160 hour summer program

. Expand existing and/or introduce new trade programs into VT schools to best utilize newly converted shop areas.

D. Apprenticeship and Licensing Requirements

. No change anticipated

E. Student Placement

. Increased efforts required by shop instructors, guidance counselors and others due to increase in graduating class 60 6,000 students.

9. STUDENT SCHEDULING

A. Day Program

. Modify student scheduling system to accommodate the 1/2 day three-year VT school program (mornings or afternoons).

(This change requires determining the number of class sections for each course and grade, and scheduling classroom space and teacher workloads.)

B. Late Afternoon Shared Time Program

. None

C. Summer Exploratory Program

. Initiate summer shop rotation schedule

10. IMPACT ON LEA

A. Facilities

. Total enrollment at the LEAs will increase by approximately 3,000 9th grade students as follows:

Four year full day enrollment at VT schools	12,000
Potential full day enrollment when converted skill center (9,000 1/2 day students in morning and afternoon)	9,000
	3,000

Thus, while total number of students using VT schools increases to 18,000, the full time equivalent is only 9,000 students.

B. Administration

. Modify student scheduling system to accommodate the 1/2 day three-year general and related instructional program.

. Establish lines of communication and coordination between LEAs and VT schools to enhance student's learning experiences.

C. Instructional Program

. General and related courses should be reviewed and modified where necessary to support student's skill training at the VT school.

D. Staffing

. No change anticipated

(Possible increase in 9th grade faculty levels may be required in those high schools traditionally sending a substantial number of students to the vocational technical schools , e.g., Bridgeport, Hartford).

11. IMPACT ON STUDENT

A. Attitude

. Student will be required to travel between two locations daily for 3 years to receive his total education. May discourage the student from participating in program.

. Contact with local classmates maintained throughout high school.

B. Extra-Curricular Activities/Sports Programs

. All extra-curricular activities/sports program will be provided by the LEAs

. Students in afternoon session at VT school may have difficulty participating in after school extra-curricular activities and sports programs at the LEA.

C. Part-time Work Experience

. After school part-time work could be affected by increased bus commuting time and increased competition for jobs (a potentially greater number of students will be pursuing similar job opportunities).

D. Family Vacation Plans

. Summer exploratory program may interfere with some vacation schedules.

12. BUS TRANSPORTATION

A. Day Program

. Transport students between LEAs and VT schools for both morning and afternoon programs. Bus scheduling and contracting required.

B. Late Afternoon Shared Time Program

. None

C. Summer Exploratory Program

. Initiate program to transport summer students between LEA and VT school. Bus scheduling and contracting required.

13. PUBLIC RELATIONS/INFORMATION DISSEMINATION

A. Internal Relations

. Inform VT school and State Department of Education personnel of planned changes, timing and benefits communicate the changes via newsletters, media and meetings.

B. External Relations

. Inform industry, labor, parents and other community members of program changes, impacts on enrollment, numbers of graduate and timing.

14. ESTIMATED RESOURCE REQUIREMENTS

A. Start-up Costs

. Modification of exploratory program

. In-service training for VT teachers

. Public Relations/Information Dissemination

. Bus scheduling/contracting

. Expand existing and/or develop new trade offerings

B. Capital Costs

. Additional shop equipment for grades 10-12

. VT school modifications

C. Operating Costs

. Day Program

. Salaries

- Program Coordinator
- Teachers
- Clerks, nurses and custodians
- Guidance counselors

. Instructional Supplies

. Equipment Maintenance and Replacement

. Utilities

. Bus Transportation

. Late Afternoon Shared Time Program

. None

. Summer Exploratory Program

. Salaries

- Program Coordinators
- Teachers
- Clerks, nurses and custodians

. Instructional Supplies

. Equipment Maintenance and Replacement

. Utilities

. Bus Transportation

IV. COST ANALYSIS

Having described each of the alternatives in detail, PMM&Co. developed estimates of additional operating, capital and start-up costs assuming implementation of the alternatives in the 16 VT schools; cost estimates were also made for the construction of additional VT schools.

- Operating costs pertain to additional annual VT school expenditures for the conduct of day-to-day school services, once an alternative has been implemented (Exhibit F, page 88).

- Start-up costs pertain to those major expenditures which the Department of Education will most likely experience only once to implement an alternative (Exhibit G, page 89).

- Capital costs pertain to the debt service for new building construction and for equipment acquisitions.

The cost information is based primarily on 1974-75 actual expenditures and has been grouped by function (e.g., administration) in a format similar to that utilized by the VT schools. Federal funds applicable to VT school operations were summarily extracted from the Department of Education detailed accounting runs and therefore are only reasonably accurate. PMM&Co. also calculated cost estimates for employee fringe benefits, overhead for central administrative services rendered by the Department to the VT schools, public works projects and bus transportation. In many cases the factual information necessary for developing cost estimates was not available. In those instances cost calculation assumptions were made (see Exhibit H, page 95). For example, because an average cost of transporting a VT student to school and back was not available, PMM&Co. prepared an estimate as follows:

State's 1973-74 reimbursement to cities and towns per VT school student at 1/2 the cost	$ 46
	x2
Estimated full cost to LEA	$ 92
Inflated to 1974-75 amount	$100

The cost analysis of alternatives and cost impact on LEAs are not precise but represents our best judgment based on available data and assumptions as set forth in this report. They are meant only to provide guidance in assessing the alternatives. We have relied upon cost and enrollment information provided us by the State Department of Education and the VT schools without verifying such data. Although we believe the information and assumptions used constitute reasonable bases for preparation of the cost estimates, they are subject to uncertainties and variations and therefore are not represented as specific results which could be achieved. Should the Department of Education decide to implement one or more of the alternatives on a pilot basis, then a more explicit analysis of costs would be necessary.

IMPACT ON LEAs

Estimating the cost impact of the alternatives on the LEA is more difficult, and although not listed as a project requirement, it is necessary in order to place the other estimates in perspective. We therefore calculated personnel and instructional supply costs of enrolling additional students in the LEAs as shown in Exhibit I, page 106. For purposes of this analysis, we did not attempt to calculate the effects of student dispersion from the 16 VT schools to the over 200 LEAs on additional staffing needs. Instead, we assumed an average student-teacher ratio of 25:1.

BUILDING CONSTRUCTION

As was indicated previously, it was desirable to estimate the cost of constructing and equiping additional facilities in order that the five alternatives might be measured against a continuation of the status quo. To prepare these estimates, PMM&Co. utilized the costs for constructing the Platt VT school, completed in 1973, and the Groton school, which is to be completed in the next year or two. The Platt school cost between $8 and $9 million and can serve approximately 600 students. The Groton school is bonded for $16 million, but in discussion with Department of Education and Public Works officials, it was estimated to cost between $13 and $14 million. The shop areas will serve approximately 800 students and the general and related, gym and food service areas are being built to hold up to 1,000. Placing the two cost estimates on a comparable basis for 800 students results in an approximate cost for construction and equipment acquisition of between $12 and $13 million. For purposes of this project, it is estimated to cost $13 million to build an 800 student VT school. More accurate cost estimates for building construction and equipment will depend upon facility location, design, program requirements and the like. Thus, a more detailed facility study will be required should the State decide to construct additional VT schools.

Accordingly, building costs for serving an additional 12,000 students would approximate $195 million (12,000 ÷ 800 students per building = 15 @ $13 million). The debt service for this amount would approximate $16.5 million per year for interest and principal, twenty year bonds at 5.75%. (The State's most recent issues were 5.7% and 5.6%.)

VOCATIONAL-TECHNICAL SCHOOL CONVERSION TO SKILL CENTERS

As discussed in Alternative 5, the VT schools would be modified to provide for 3,000 additional shop stations. The type programs to be offered in the available space cannot be determined at this time, thus we have assumed a continuation of trade and industrial programs. Further, since it is not feasible within the scope of this project to define renovation and equipment requirements in each of the 16 VT schools, we will utilize the per square foot cost estimate of $74 developed from data provided by the Department of Education. Accordingly, costs for converting the VT schools' general and related rooms to 3,000 additional shop stations would approximate $31 million ($74 per square foot times an average of 140 square feet per student station times the 3,000 stations). The debt service for this amount would approximate $2,600,000 per year for interest and principal, twenty year bonds at 5.75%.

EXHIBIT F

CONNECTICUT DEPARTMENT OF EDUCATION

ESTIMATED ADDITIONAL OPERATING COSTS
($ Thousand)

Description	Construct Additional VT Schools	Alternative* 1	2	3	4	5
ESTIMATED OPERATING COSTS*						
Administration	$	65	178	178	178	457
Operations and Maintenance		94	640	732	732	470
Day School Instruction		466	3,449	3,664	3,664	(624)
Other Instruction		248	344	344	344	248
Equipment		32	190	190	190	190
Benefits Contribution (20% of Additional Salaries)		161	839	893	893	32
Overhead Contribution (3.4% of Additional Operating Costs)		31	163	174	174	25
Public Works Projects		-	88	88	88	-
Bus Transportation		80	680	720	720	720
Total	$ 19,272	1,177	6,571	6,983	6,983	1,518
ESTIMATED START-UP COSTS (See Exhibit G, pages 89-94)	57	24	57	46	59	77
ESTIMATED COST IMPACT ON LEAS INCREASE (DECREASE) (See Exhibit I, page 106)	(7,360)	-	(1,830)	(1,830)	(1,830)	1,830

*See Exhibit H which contains major cost assumptions. The assumptions have been grouped in a general category and by each of the five alternatives.

NOTE: This Exhibit was prepared based on available information and assumptions as set forth in this report. They are subject to uncertainties, and therefore do not represent specific results which could be achieved.

EXHIBIT G

CONNECTICUT DEPARTMENT OF EDUCATION

CONSTRUCTION OF NEW VOCATIONAL-TECHNICAL FACILITIES

ESTIMATED START-UP COSTS
Per School Constructed

($ Thousand)

		Dollar Amount
1.	Bus scheduling and contracting.	$ 3
2.	In-service training of teaching staff for each new school (2 days at 7 hours per day for each teacher).	6
3.	Student scheduling in classes.	3
4.	Salary costs per director and assistant director hired one year prior to operation for planning, program selection and the like.	45
		$ 57

NOTE: This Exhibit was prepared based on available information and assumptions as set forth in this report. They are subject to uncertainties, and therefore do not represent specific results which could be achieved.

EXHIBIT G, CONT.

CONNECTICUT DEPARTMENT OF EDUCATION

ALTERNATIVE 1

ESTIMATED START-UP COSTS

($ Thousand)

		Dollar Amount
1.	Change 9th grade exploratory program to a summer program for 8th and 9th grade students to survey a selected number of trade opportunities. (7 member committee for 20 days, 4 hours per day at $9.00 per hour plus expenses).	$ 7
2.	Expand grades 10-12 vocational-technical school day program to fill void resulting from removal of 9th grade program.	-
3.	In-service training to prepare 9th grade general and related teachers for grades 10-12 instruction (5 days (2 hours per day) per 9th grade teacher during the school day plus instructional costs for each vocational-technical school.	10
4.	Public relations and information dissemination program to explain the vocational-technical school exploratory and three-year day programs to school personnel and community (combined effort of Department of Education personnel and communications expert.	5
5.	Bus scheduling and contracting for summer program.	2
		$ 24

EXHIBIT G, CONT.

CONNECTICUT DEPARTMENT OF EDUCATION

ALTERNATIVE 2

ESTIMATED START-UP COSTS

($ Thousand)

	Dollar Amount
1. Change 9th grade exploratory program to a summer program for 8th and 9th grade students to survey a selected number of trade opportunities. (7 member committee for 20 days, 4 hours per day at $9.00 per hour plus expenses).	$ 7
2. Expand grades 10-12 vocational-technical school day program to fill void resulting from removal of 9th grade program.	-
3. Design and implement late afternoon shared-time program at vocational-technical schools. Requires tailoring of exploratory and skill training programs to fit 2 year, 3 hour per day instructional mode. (7 member committee for 5 days, 4 hours per day per trade plus expenses (approximately 16 trades).	25
4. In-service training to prepare 9th grade general and related teachers for grades 10-12 instruction (5 days (2 hours per day) per 9th grade teacher during the school day plus instructional costs for each vocational-technical school).	10
5. Public relations and information dissemination program to explain vocational-technical school summer exploratory three year day and two-year late afternoon shared-time programs to school personnel and community (combined effort of Department of Education personnel and communications expert.	10
6. Bus scheduling and contracting for late afternoon shared-time and summer programs.	5
	$ 57

EXHIBIT G, CONT.

CONNECTICUT DEPARTMENT OF EDUCATION

ALTERNATIVE 3

ESTIMATED START-UP COSTS

($ Thousand)

	Dollar Amount
1. Change 9th grade exploratory program to a summer program for 8th and 9th grade students to survey a selected number of trade opportunities. (7 member committee for 20 days, 4 hours per day at $9.00 per hour plus expenses).	$ 7
2. Expand grades 10-12 vocational-technical school day program to fill void resulting from removal of 9th grade program.	-
3. Expand grades 10-12 vocational-technical school program to late afternoon shared-time program. Requires limited modification to fit the 3 year, 3 hour per day program (7 member committee for 3 days, 4 hours per day per trade plus expenses).	14
4. In-service training to prepare 9th grade general and related teachers for grades 10-12 instruction (5 days (2 hours per day) per 9th grade teacher during the school day plus instructional costs for each vocational-technical school).	10
5. Public relations and information dissemination program to explain vocational-technical school summer exploratory, three year day and two-year late-afternoon shared-time programs to school personnel and community (combined effort of Department of Education personnel and communications expert).	10
6. Bus scheduling and contracting for late afternoon shared-time and summer programs.	5
	$ 46

EXHIBIT G, CONT.

CONNECTICUT DEPARTMENT OF EDUCATION

ALTERNATIVE 4

ESTIMATED START-UP COSTS

($ Thousand)

	Dollar Amount
1. Change 9th grade exploratory program to a summer program for 8th and 9th grade students to survey a selected number of trade opportunities. (7 member committee for 20 days, 4 hours per day at $9.00 per hour plus expenses).	$ 7
2. Expand grades 11-12 vocational-technical school day program to fill void resulting from removal of grades 9-10 from day program.	3
3. Convert 10th grade skill training program to a 3 hour late afternoon shared-time program (7 member committee, 3 days (4 hours per day) per trade plus expenses).	14
4. In-service training to prepare 9th and 10th grade general and related teachers for grades 11-12 (5 days (2 hours per day) per teacher during the school year plus instructional costs).	20
5. Public relations and information dissemination program to explain vocational-technical school summer exploratory, 10th grade late afternoon shared-time, and two-year day program to school personnel and community (combined effort of Department of Education personnel and communications expert).	10
6. Bus scheduling and contracting for late afternoon shared-time and summer programs.	5
	$ 59

EXHIBIT G, CONT.

CONNECTICUT DEPARTMENT OF EDUCATION

ALTERNATIVE 5

ESTIMATED START-UP COSTS

($ Thousand)

	Dollar Amount
1. Change 9th grade exploratory program to a summer program for 8th and 9th grade students to survey a selected number of trade opportunities. (7 member committee for 20 days, 4 hours per day at $9.00 per hour plus expenses).	$ 7
2. Expand and modify vocational-technical school trade programs in grades 10-12 to handle conversion to a three-year skill center with half-day sessions for expanded numbers of shop stations (7 member committee, 5 days (4 hours per day) per trade plus expenses).	25
3. In-service training of vocational-technical school teachers to orient participants in skill center concepts and school operations (3 days, 2 hours each, for each participant during the school day).	30
4. Public relations and information dissemination program to explain vocational-technical school summer exploratory, and three-year skill center program to school personnel and community (combined effort of Department of Education personnel and communications expert).	10
5. Bus scheduling and contracting for day and summer programs.	5
	$ 77

EXHIBIT H

CONNECTICUT DEPARTMENT OF EDUCATION

MAJOR ASSUMPTIONS FOR ESTIMATING ADDITIONAL COSTS

GENERAL ASSUMPTIONS

1. All cost analysis is based on 1974-1975 dollars. No adjustments were made for inflation.

2. Fringe benefit costs average 20% of personnel service expenditures.

3. An average of 3.4% is applied to annual operating expenditures (exclusive of capital outlays for equipment) for administrative overhead.

4. The faculty-student ratio for day school shop instruction will remain at 15:1.

5. Average student-faculty ratio, including

   - general and related instruction
   - trade instruction
   - guidance
   - library
   - physical education

   for day school instruction is 16:1.

6. Vocational-technical schools are utilized approximately 180 days from 8:00 a.m. to 3:00 p.m. Only limited use is made of facilities during late afternoon and in the summer.

7. Bus transportation costs per pupil will continue at approximately $100 per year (1974-1975); shared equally by the LEA and the state.

8. Bus transportation cost estimates to and from vocational-technical schools for late afternoon and summer students will be based on the average pupil cost of $100.

9. Food service programs will be continued at vocational-technical schools under Alternative 5. They could be eliminated and lunch provided at the LEA. However, food service costs are partially Federally funded and the facilities are an integral part of food trades programs. Also, maintaining food service at the VT schools allows for better bus scheduling—buses can leave LEAs with afternoon students at 11:00 a.m. while students at vocational-technical schools are luncheoning; when buses reach VT schools, morning VT school students return to LEAs while afternoon students have lunch. If vocational-technical food service is eliminated, buses would be required to travel twice as long, possibly doubling expense for which no Federal funds are provided.

10. Program modifications, additions and expansions of existing programs into other time periods (e.g., late afternoon shared-time program) will continue to be accomplished centrally under the direction of the Department of Education to foster continuity and uniformity among the VT schools.

11. All VT schools' programs will be provided only to high school age students during the day time. Adult day and post graduate students will be provided with an alternate method of obtaining skill training either by transferring to community (technical) colleges, proprietary facilities or in evening programs at the VT schools.

12. Bonds for building construction and land and equipment acquisitions will be for 20 years at 5-3/4%.

13. It will take approximately 3 years to design a VT school, issue bonds and build the facility.

14. All new VT schools will be staffed and operated based on 1974-1975 patterns. Operating costs for a new school will be based on a student enrollment of 800 at an average per student cost of $1,600 ($19.3 million ÷ 12,000 students).

15. One director and assistant will be hired one year prior to opening a new school for planning and coordinating the school's program and activities.

16. Sufficient numbers of qualified teaching personnel will be available to train late afternoon and summer vocational-technical students.

17. A student-teacher ratio of 25:1 was assumed for students transferring to LEAs from VT schools. Dispersion from 16 VT schools to the 200+ high schools was not considered in adopting this ratio.

18. Air conditioning of VT schools will not be necessary since summer program will conclude at noon each day.

19. Changing the VT schools to skill centers as discussed under Alternative 5 will require the conversion of general and related classrooms to trade and industrial shops. Since it was not feasible within the scope of this project to determine the number of student stations that would result from conversion due to the need for greater space for machinery and other equipment, storage and student work areas and the adaptability of the facility to modification, we have assumed that for every two general and related student stations, one shop station would result. Thus the approximate 6,000 stations would be converted to an additional 3,000 shop stations. Only when actual facility conversion takes place and the vocational programs have been selected will the Department of Education be able to more accurately determine the number of resulting shop student stations.

20. Student enrollment in the VT schools will be distributed equally among the grades. No enrollment reductions will be anticipated due to student attrition. This assumption simplifies the cost calculations and facilitates the reader's comparisons of the alternatives. (It would appear, based on available data, that between 65 and 70 percent of the students graduate from the VT schools; only 55-60 percent of those who enrolled initially in the 9th grade graduate.)

EXHIBIT H, CONT.

ALTERNATIVE 1 - COST ASSUMPTIONS

ADMINISTRATION

Summer Program

One coordinator and one clerk/typist for 2 months at each of the 16 VT schools to handle summer enrollment.

OPERATIONS AND MAINTENANCE

Summer Program

5% increase in operations and maintenance costs (e.g., salaries, materials, utilities) to provide the 4,000 students for 2 months, 4 hours per day.

DAY SCHOOL INSTRUCTION

Summer Program

267 additional teachers (4,000 students divided by shop class student-teacher ratio of 15:1) for 45 days, 4 hours per day and a 10% increase in supplies costs to provide for 4,000 students.

OTHER INSTRUCTION

Day Program

One additional guidance counselor at each VT school to help the increased student entering and graduating classes (1/3 increase) select trade program and obtain employment respectively.

Summer Program

One additional nurse for 1/2 days for 2 months at each VT school.

EQUIPMENT

Summer Program

10% increase in equipment costs due to greater use of shop equipment by 4,000 additional students.

BUS TRANSPORTATION*

Summer Program

4,000 students bussed to and from VT school.

*See page 86 for an explanation of bus transportation costs.

EXHIBIT H, CONT.

ALTERNATIVE 2 - COST ASSUMPTIONS

ADMINISTRATION

Late Afternoon Program

One coordinator for half days at each of the 16 VT schools to handle the 6,000 additional students.

Summer Program

One coordinator and 1 clerk/typist for 2 months at each VT school to handle summer enrollment.

OPERATIONS AND MAINTENANCE

Late Afternoon Program

25% increase in operations and maintenance costs (e.g., salaries, materials, utilities) to provide for 6,000 additional students during late afternoon.

Summer Program

5% increase in operations and maintenance costs to provide for 4,000 students for 2 months, 4 hours per day.

DAY SCHOOL INSTRUCTION

Late Afternoon Program

400 additional teachers (6,000 students divided by shop class student-teacher ratio of 15:1) for half days and a 25% increase in supplies costs to provide for 6,000 additional students.

Summer Program

267 additional teachers (4,000 ÷ 15) for 45 days, 4 hours per day and a 10% increase in supplies costs to provide for 4,000 students.

OTHER INSTRUCTION

Day Program

One additional guidance counselor at each VT school to help the increased entering and graduating day and late afternoon classes select trade programs and obtain employment respectively.

Late Afternoon Program

One additional nurse for 1/2 days at each VT school.

Summer Program

One additional nurse for 1/2 days for 2 months at each VT school.

EQUIPMENT

Late Afternoon Program

50% increase in equipment costs due to greater use of shop equipment by 6,000 additional students.

Summer Program

10% increase in equipment costs due to greater use of shop equipment by 4,000 additional students.

EXHIBIT H, CONT.

ALTERNATIVE 2 - COST ASSUMPTIONS, CONTINUED

PUBLIC WORKS PROJECTS

Late Afternoon Program

25% increase in project costs due to increased use of facilities by 6,000 additional students.

BUS TRANSPORTATION*

Late Afternoon Program

6,000 students bussed to and from VT school.

Summer Program

4,000 students bussed to and from VT school.

*See page 86 for an explanation of bus transportation costs.

EXHIBIT H, CONT.

ALTERNATIVE 3 - COST ASSUMPTIONS

ADMINISTRATION

Late Afternoon Program

One coordinator for half days at each of the 16 VT schools to handle the 6,000 additional students.

Summer Program

One coordinator and 1 clerk/typist for 2 months at each VT school to handle summer enrollment.

OPERATIONS AND MAINTENANCE

Late Afternoon Program

25% increase in operations and maintenance costs (e.g., salaries, materials, utilities) to provide for 6,000 additional students during late afternoon.

Summer Program

10% increase in operations and maintenance costs to provide for 6,000 students for 2 months, 4 hours per day.

DAY SCHOOL INSTRUCTION

Late Afternoon Program

400 additional teachers (6,000 students divided by shop class student-teacher ratio of 15:1) for half days and a 25% increase in supplies costs to provide for 6,000 additional students.

Summer Program

400 additional teachers (6,000 ÷ 15) for 45 days, 4 hours per day and a 10% increase in supplies costs to provide for 6,000 students.

OTHER INSTRUCTION

Day Program

One additional guidance counselor at each VT school to help the increased entering and graduating day and late afternoon classes select trade programs and obtain employment respectively.

Late Afternoon Program

One additional nurse for 1/2 days at each VT school.

Summer Program

One additional nurse for 1/2 days for two months at each VT school.

EQUIPMENT

Late Afternoon Program

50% increase in equipment costs due to greater use of shop equipment by 6,000 additional students.

Summer Program

10% increase in equipment costs due to greater use of shop equipment by 6,000 additional students.

EXHIBIT H, CONT.

ALTERNATIVE 3 - COST ASSUMPTIONS, CONTINUED

PUBLIC WORKS PROJECTS

Late Afternoon Program

25% increase in project costs due to increased use of facilities by 6,000 additional students.

BUS TRANSPORTATION*

Late Afternoon Program

6,000 students bussed to and from VT school.

Summer Program

6,000 students bussed to and from VT school.

*See page 86 for an explanation of bus transportation costs.

EXHIBIT H, CONT.

ALTERNATIVE 4 - COST ASSUMPTIONS

ADMINISTRATION

Late Afternoon Program

One coordinator for half days at each of the 16 VT schools to handle 6,000 additional students.

Summer Program

One coordinator and one clerk/typist for 2 months at each VT school to handle summer enrollment.

OPERATIONS AND MAINTENANCE

Late Afternoon Program

25% increase in operation and maintenance costs (e.g., salaries, materials, utilities) to provide for 6,000 additional students during late afternoon.

Summer Program

10% increase in operations and maintenance costs to provide for 6,000 students for 2 months, 4 hours per day.

DAY SCHOOL INSTRUCTION

Late Afternoon Program

400 additional teachers (6,000 students divided by shop class student-teacher ratio of 15:1) for half days and a 25% increase in supplies costs to provide for 6,000 additional students.

Summer Program

400 additional teachers (6,000 ÷ 15) for 45 days, 4 hours per day and a 10% increase in supplies costs to provide for 6,000 students.

OTHER INSTRUCTION

Day Program

One additional guidance counselor at each VT school to help the increased entering and graduating day and late afternoon classes select trade programs and obtain employment respectively.

Late Afternoon Program

One additional nurse for 1/2 days at each VT school.

Summer Program

One additional nurse for 1/2 days for 2 months at each VT school.

EQUIPMENT

Late Afternoon Program

50% increase in equipment costs due to greater use of shop equipment by 6,000 additional students.

Summer Program

10% increase in equipment costs due to greater use of shop equipment by 6,000 additional students.

EXHIBIT H, CONT.

ALTERNATIVE 4 - COST ASSUMPTIONS, CONTINUED

PUBLIC WORKS PROJECTS

Late Afternoon Program

25% increase in project costs due to increased use of facilities by 6,000 additional students.

BUS TRANSPORTATION*

Late Afternoon Program

6,000 students bussed to and from VT school.

Summer Program

6,000 students bussed to and from VT school.

*See page 86 for an explanation of bus transportation costs.

EXHIBIT H, CONT.

ALTERNATIVE 5 - COST ASSUMPTIONS

ADMINISTRATION

Day Program

One VT-LEA coordinator and one clerk/typist at each of the 16 VT schools to handle the 6,000 additional students and the half day program.

Summer Program

One coordinator and 1 clerk typist for 2 months at each VT school to handle summer enrollment.

OPERATIONS AND MAINTENANCE

Day Program

50% increase in light and power due to construction and utilization of 3,000 additional shop stations and 40% increase in general repair costs to provide for 6,000 additional students during the day.

Summer Program

10% increase in operations and maintenance costs (e.g., salaries, materials, utilities) to provide for 6,000 additional students for 2 months, 4 hours per day.

DAY SCHOOL INSTRUCTION

Day Program

200 additional shop teachers (3,000 divided by shop class student-teacher ratio of 15:1) to provide for 6,000 additional students; transfer out approximately 248 general and related teachers, 26 physical education instructors, and 16 librarians. Increase in cost of additional shop supplies would be offset by cost of existing general and related instructional supplies.

Summer Program

400 additional teachers (6,000 ÷ 15) for 45 days, 4 hours per day and a 10% increase in supplies costs to provide for 6,000 students.

OTHER INSTRUCTION

Day Program

One additional guidance counselor at each VT school to help the increased entering and graduating classes select trade programs and obtain employment respectively.

Summer Program

One additional nurse for 1/2 days for 2 months at each VT school.

EQUIPMENT

Day Program

50% increase in equipment costs due to greater use of shop equipment by 6,000 additional students.

Summer Program

10% increase in equipment costs due to greater use of shop equipment by 6,000 additional students.

EXHIBIT H, CONT.

ALTERNATIVE 5 - COST ASSUMPTIONS, CONTINUED

BUS TRANSPORTATION*

Day Program

6,000 additional students bussed to and from VT school.

Summer Program

6,000 students bussed to and from VT school.

*See page 86 for an explanation of bus transportation costs.

CONNECTICUT DEPARTMENT OF EDUCATION

ESTIMATED IMPACT OF ALTERNATIVES ON LEA'S INSTRUCTIONAL COSTS

	Enrollment by Grade[1]					Cost[2] Increase (Decrease) to LEA
	9	10	11	12	Total	($ Thousand)
Construct Additional VT Schools						
. Transfer 12,000 students to VT schools	(3,000)	(3,000)	(3,000)	(3,000)	(12,000)	$ (7,360)
Alternative 1						
. Enroll 9th grade VT students in LEAs	3,000				3,000	
. Transfer 1,000 students in each of grades 10-12 to VT schools		(1,000)	(1,000)	(1,000)	(3,000)	
					-	-
Alternative 2						
. Enroll 9th grade VT students in LEAs	3,000				3,000	
. Transfer 1,000 students in each of grades 10-12 to VT schools		(1,000)	(1,000)	(1,000)	(3,000)	
. Transfer 3,000 students in each of grades 11-12 to VT school shared time program (1/2 time)			(1,500)[1]	(1,500)[1]	(3,000)	
					(3,000)	(1,830)
Alternative 3						
. Enroll 9th grade VT students in LEAs	3,000				3,000	
. Transfer 1,000 students in each of grades 10-12 to VT schools		(1,000)	(1,000)	(1,000)	(3,000)	
. Transfer 2,000 students in each of grades 10-12 to VT school shared-time program (1/2 time)		(1,000)[1]	(1,000)[1]	(1,000)[1]	(3,000)	
					(3,000)	(1,830)
Alternative 4						
. Enroll 9th and 10th grade VT students in LEAs	3,000	3,000			6,000	
. Transfer 6,000 10th grade students to VT school shared-time program (1/2 time)		(3,000)[1]			(3,000)	
. Transfer 3,000 students in each of grades 11-12 to VT schools			(3,000)	(3,000)	(6,000)	
					(3,000)	(1,830)
Alternative 5						
. Enroll 12,000 VT students in LEAs	3,000	3,000	3,000	3,000	12,000	
. Transfer 18,000 students in each of grades 10-12 to VT schools 1/2 days		(3,000)[1]	(3,000)[1]	(3,000)[1]	(9,000)	
					3,000	1,830

[1]The number of students in shared-time programs have been converted to full-time equivalents for this analysis (3,000 students 1/2 time = 1,500).

[2]Cost assumes an average teacher salary of $14,500 including 20% fringe benefits plus $30 per student for instructional supplies.

NOTE: This Exhibit was prepared based on available information and assumptions set forth in this report. They are subject to uncertainties, and therefore do not represent specific results which could be achieved.

EXHIBIT I

V. IMPLEMENTATION CONSIDERATIONS

While this report is oriented primarily to the selection and cost analysis of certain alternatives, the Commissioner and Department of Education and eventually the legislature are faced with the challenge of selecting certain of the alternatives for implementation in the VT schools on a pilot basis. We do not believe it is feasible to implement any of the five alternatives before July 1, 1977 or completely phase one in before fiscal year 1980-81. On the other hand, if the State should decide to construct more VT schools, it is possible that buillings could begin to open for September 1979 (assuming bond approval by June '76 and construction completed 2-3 years later).

Each alternative could be utilized in the 16 VT schools. We believe, however, that Alternative 5 (change to a 3 year skill center) would be more applicable to metropolitan areas (e.g., Hartford) where there are large concentrations of students. This reduces commuting time between facilities and strengthens the opportunity for good program coordination between general and related and shop training.

IMPLEMENTATION APPROACHES

Each of the five alternatives requires a somewhat different scheduling approach to help ensure a successful implementation. The major tasks for converting the existing VT schools to conform to the alternatives are described below. Exhibit J (page 110) presents our recommendations for phasing in students to comply with the tasks. We assumed the adoption of each alternative as a pilot by September 1976 with implementation beginning in July 1977. For each alternative, VT school enrollment is first reduced from current levels to accomodate grade changes and the need for exploratory training by students before moving to more advanced skill training. By September 1980, however, enrollments are at their maximums as indicated in Exhibit J. It might be necessary for the Department of Education to indicate that decreases in staffing requirements, if necessary, will result only through attrition. This problem may be solved by allocating existing staff between day, late afternoon, and summer programs.

ALTERNATIVE 1

Task	Target Date
Select alternative for piloting in VT school(s)	Sept. 1976
Institute 8th grade summer exploratory program	July 1977
Eliminate 9th grade program at VT schools	Sept. 1977
Institute 9th grade summer exploratory program	July 1978
Increase 10th grade day enrollment by one-third	Sept. 1978
Increase 11th grade day enrollment by one-third	Sept. 1979
Increase 12th grade day enrollment by one-third	Sept. 1980

The enrollment impact of these decisions appear in Exhibit J.

ALTERNATIVE 2

Task	Target Date
Select alternative for piloting in VT school(s)	Sept. 1976
Institute 8th grade summer exploratory program	July 1977
Eliminate 9th grade program at VT schools	Sept. 1977
Enroll 11th grade LEA students in late afternoon shared-time program	Sept. 1977
Institute 9th grade summer exploratory program	July 1978
Enroll 12th grade LEA students in late afternoon shared-time program	Sept. 1978
Increase 10th grade day enrollment by one-third	Sept. 1978
Increase 11th grade day enrollment by one-third	Sept. 1979
Increase 12th grade day enrollment by one-third	Sept. 1980

ALTERNATIVE 3

Task	Target Date
Select alternative for piloting in VT school(s)	Sept. 1976
Institute 8th grade summer exploratory program	July 1977
Eliminate 9th grade program at VT schools	Sept. 1977
Institute 9th grade summer exploratory program	July 1978
Enroll 10th grade LEA students in late afternoon shared-time program	Sept. 1978
Increase 10th grade day enrollment by one-third	Sept. 1978
Enroll 11th grade LEA students in late afternoon shared-time program	Sept. 1979
Increase 11th grade day enrollment by one-third	Sept. 1979
Enroll 12th grade LEA students in late afternoon shared-time program	Sept. 1980
Increase 12th grade enrollment by one-third	Sept. 1980

ALTERNATIVE 4

Task	Target Date
Select alternative for piloting in VT school(s)	Sept. 1976
Institute 8th grade summer exploratory program	July 1977
Eliminate 9th grade program at VT schools	Sept. 1977
Institute 9th grade summer exploratory program	July 1978
Eliminate 10th grade program at VT schools	Sept. 1978
Enroll 10th grade LEA students in late afternoon shared-time program	Sept. 1978
Increase 11th grade enrollment by 100%	Sept. 1979
Increase 12th grade enrollment by 100%	Sept. 1980

ALTERNATIVE 5

Task	Target Date
Select alternative for piloting in VT school(s)	Sept. 1976
Initiate facility modification and equipment acquisition to provide for an additional 3,000 shop stations	
Institute 8th grade summer exploratory program	July 1977
Eliminate 9th grade program	Sept. 1977
Institute 9th grade summer exploratory program	July 1978
Convert 10th grade to skill center and increase enrollment by 100% for half days	Sept. 1978
Convert 11th grade to skill center and increase enrollment by 100% for half days	Sept. 1979
Convert 12th grade to skill center and increase enrollment by 100% for half days	Sept. 1980

EXHIBIT J

CONNECTICUT DEPARTMENT OF EDUCATION

IMPLEMENTATION PLAN

PHASING OF ENROLLMENT
(in thousands)

Description	1976-77 Program		1977-78 Program		1978-79 Program		1979-80 Program		1980-81 Program	
	Day	Late Afternoon*	Day	Late Afternoon*	Day	Late Afternoon*	Day	Late Afternoon*	Day	Late Afternoon*
ALTERNATIVE 1										
Exploratory										
8th grade summer	-		4		4		4		4	
9th grade summer	-		-		4		4		4	
9th grade	3		-		-		-		-	
10th grade	3		3		4		4		4	
11th grade	3		3		3		4		4	
12th grade	3		3		3		3		4	
Enrollment, grades 10-12	12		9		10		11		12	
ALTERNATIVE 2										
Exploratory										
8th grade summer	-		4		4		4		4	
9th grade summer	-		-		4		4		4	
9th grade	3		-		-		-		-	
10th grade	3		3		4		4		4	
11th grade	3		3	3	3	3	4	3	4	3
12th grade	3		3	-	3	3	3	3	4	3
Enrollment, grades 10-12	12		9	3	10	6	11	6	12	6
ALTERNATIVE 3										
Exploratory										
8th grade summer	-		6		6		6		6	
9th grade summer	-		-		6		6		6	
9th grade	3		-		-		-		-	
10th grade	3		3		4	2	4	2	4	2
11th grade	3		3		3		4	2	4	2
12th grade	3		3		3		3	-	4	2
Enrollment, grades 10-12	12		9		10	2	11	4	12	6
ALTERNATIVE 4										
Exploratory										
8th grade summer	-		6		6		6		6	
9th grade summer	-		-		6		6		6	
9th grade	3		-		-		-		-	
10th grade	3		3		-	6	-	6	-	6
11th grade	3		3		3		6	-	6	
12th grade	3		3		3	-	3	-	6	
Enrollment, grades 10-12	12		9		6	6	9	6	12	6
ALTERNATIVE 5										
Exploratory										
8th grade summer	-		6		6		6		6	
9th grade summer	-		-		6		6		6	
9th grade	3		-		-		-		-	
10th grade	3		3		6		6		6	
11th grade	3		3		3		6		6	
12th grade	3		3		3		3		6	
Enrollment, grades 10-12	12		9*		12*		15*		18*	

*The students in the late afternoon shared-time programs and skill centers (Alternative 5) spend only half time at VT schools.

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